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In the Supreme Court

OF THE

United States

OCTOBER TERM, 1985

URSULA J. SCHOENBORN, in her own right and as parent and natural guardian of Stephanie Renee Schoenborn, a minor,
Petitioner,

vs.

THE BOEING COMPANY,
Respondent.

URSULA J. SCHOENBORN, as Executrix of the Estate of Leon Edward Schoenborn, Deceased, *et al.*,
Petitioners,

vs.

THE BOEING COMPANY,
Respondent.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE THIRD CIRCUIT

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QUESTIONS PRESENTED FOR REVIEW

1. In a diversity action where the government would not be immune from suit, can a negligent manufacturer of a defective helicopter purchased by the military escape liability to civilian bystanders injured by its product at a civilian airshow by invoking a "federal government military contract defense?"[1]

2. Is the existence of a "federal government military contract defense" determined by state contract and tort law as held by the Third Circuit or by federal common law as held by the Fifth Circuit?[2]

3. Based on its view of a "government contract defense" and facts interpreted in the light most favorable to the losing defendant, can a federal court of appeals properly order entry of judgment notwithstanding the verdict in favor of the negligent manufacturer of a defective helicopter?[3]

4. In light of the special verdict on liability rendered by the jury, did the court of appeals properly define and apply the elements of any federal government military contract defense?[3]

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[1]URSULA J. SCHOENBORN, in her own right and as parent and natural guardian of Stephanie Renee Schoenborn, a minor, plaintiff, v. The Boeing Company, defendant (USDC (E.D. Pa.) No. 82-4541) consolidated for appeal as 3d Cir. No. 84-1446 with cases consolidated for trial on liability as MDL 555, In Re: Air Crash Disaster at Mannheim, Germany, on September 11, 1982.

[2]URSULA J. SCHOENBORN, as Executrix of the Estate of LEON EDWARD SCHOENBORN, Deceased, plaintiff v. The Boeing Company, defendant (USDC (E.D. Pa.) No. 82-4339) consolidated for appeal as 3d Cir. No. 84-1446 with cases consolidated for trial on liability as MDL 555, In Re: Air Crash Disaster at Mannheim, Germany on September 11, 1982, with cases brought by counsel of

record against THE BOEING COMPANY on behalf of: SHEILA CRUZ, as Executrix of the Estate of Joseph Cruz, Deceased (No. 82-4540); KATHRYN SUZANNE HUDSON, as Administratrix of the Estate of Alvin Glenn Edwards, Deceased (No. 83-3161); and SUSAN SUTTON, as Executrix of the Estate of Michael Anthony Sutton, Deceased (No. 82-4539). Also consolidated in MDL 555 and Appeal No. 84-1446 were plaintiffs represented by other counsel of record filing separate petitions in this Court as listed in Appendix G.

[3]As to plaintiffs in footnotes 1 and 2 above.

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OPINIONS BELOW

The opinion of the Court of Appeals (App. A *infra*) is reported at 769 F.2d 115 (3d Cir. 1985). The opinion of the District Court (App. B *infra*) is reported at 586 F.Supp. 711 (E.D. Pa. 1984).

JURISDICTION

The judgment of the Court of Appeals for the Third Circuit was entered on June 28, 1985 (App. C *infra*). A timely petition for rehearing *en banc* was denied on July 24, 1985 (App. D *infra*). This Court's jurisdiction is invoked under 28 U.S.C. § 1254(1).

APPLICABLE CONSTITUTIONAL AND STATUTORY PROVISIONS

U.S. CONST. Art. VI cl.2 (1789) provides:

> "This Constitution, and the Laws of the United States which shall be made in Pursuance thereof . . . shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding."

U.S. CONST. Amend. VII (1791) provides:

> "In Suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury shall be otherwise re-examined in any Court of the United States, than according to the rules of the common law."

FED.R.CIV.P. 50(b) (1963) provides, in relevant part:

> "[A] party who has moved for a directed verdict may move to have the verdict and any judgment entered thereon set aside. . . .*** If a verdict was returned the court may allow the judgment to stand. . . ."

STATEMENT OF THE CASE

As his wife Ursula and his 8 year old daughter Stephanie watched, pilot Leon Schoenborn died with 7 other U.S. servicemen and 38 civilian parachutists on September 11, 1982, when a CH-47C "Chinook" helicopter (No. 22292) crashed during a civilian airshow at Mannheim, Germany. The intended flight plan was to climb to an altitude of 12,500 feet and drop the parachutists. After takeoff the helicopter climbed to about 10,500 feet, leveled off and started to descend. Pilot Schoenborn radioed a companion helicopter "We've had a flicker on the master caution light and a noise aft of the cockpit." He continued the emergency descent without power until about 900 feet above ground level. At that point, the shaft synchronizing the fore and aft rotor blade assemblies of this tandem rotor helicopter severed at station 120. The immediate desynchronization allowed the fore and aft blades to strike each other with a loud bang, causing the physical separation of the aft rotor assembly. Those blades struck the helicopter which fell, out of control, onto an autobahn and exploded. Miraculously, none of the onlookers were engulfed in flame or injured or killed by the wreckage.

In various United States District Courts the heirs of the civilian and military occupants brought survival and wrongful death "crashworthiness" actions based on negligence, breach of warranty, and strict liability in tort. The Panel on Multidistrict Litigation consolidated the cases for trial as MDL 555 in the Eastern District of Pennsylvania. The eyewitnesses brought independent actions based on negligent infliction of emotional distress. The trial court consolidated both types of MDL 555 cases for trial on liability. The U.S. Army, which owned the helicopter provided for the civilian airshow, is not a party to these actions. The defendant, The Boeing Company

("Boeing"), designed, assembled, manufactured, inspected and tested this CH-47 model helicopter, including originating and preparing its detail design specifications and investigating three prior accidents in which de-synchronizations occurred.

Boeing designed, tested and manufactured the CH-47 model helicopter under a development contract with the U.S. Army which set forth only broad mission and performance specifications. The basic CH-47 design uses tandem rotor assemblies, one fore and one aft. The design is inherently dangerous because the fore and aft rotor blades rotate through the same airspace. A complex synchronization system theoretically insures that the fore and aft rotor blades do not strike each other in flight. Any blade strike in flight is catastrophic, resulting in severance of the affected blades followed instantaneously by loss of control and destruction of the helicopter.

Boeing then produced CH-47 Helicopter 22292 under a purchase order with the U.S. Army which incorporated by reference the detailed design specifications previously created by Boeing under the development contract. In other words, the purchase order merely specified production of the manufacturer's pre-existing product.

Prior to the Mannheim accident Boeing participated in the investigation of three other de-synchronization accidents (Vietnam 1966, Alabama 1966 and Vietnam 1968). In all three cases, the synchronization shaft failed at Station 120, about six inches from the flange or forward end of the synch shaft, and fell into three pieces due to contact between the airframe and the synch shaft. In all three cases, the synch shaft became displaced due to transmission failure. In each case the transmission failed for a different reason. Boeing identified then ignored the ultimate design defect — the inadequate clearance at Sta-

tion 120 — and misled the U.S. Army into focusing on superficial but foreseeable transmission maintenance problems which Boeing offered to fix at taxpayers' expense. App. F. The Mannheim accident fit the same pattern.

At Mannheim pilot Schoenborn could have landed the disabled helicopter safely if he had had but 30 *seconds* more time before the synch shaft severed, regardless of the transmission failure. Plaintiffs' expert Angelo Coronato testified that the pilot could have had 15 to 30 *minutes* more time if the synch shaft had been made of steel rather than aluminum or if the synch shaft had been protected by a steel sleeve at Station 120. In essence, plaintiffs presented a crashworthiness case. *See*, App. B. Boeing's position is set forth fully in Appendix A.

The jury rendered a special verdict on liability in favor of plaintiffs, finding Boeing negligent and in "final control" of the CH-47 design and finding helicopter 22292 defective. App. E. After denying Boeing's motion for judgment notwithstanding the verdict and new trial, the district court certified its judgment on liability for interlocutory appeal under 28 U.S.C. § 1292(b). The first issue certified and the only one considered by the Third Circuit is "whether the Court applied the correct legal standard concerning the so-called government contract defense."

The Third Circuit ordered entry of judgment notwithstanding the verdict based on the government contract defense, thereby creating a final disposition of the MDL 555 cases. App. A. In so doing, the Third Circuit avoided deciding other issues raised by Boeing. App. A at 9n.6 & 21. Thereafter, plaintiffs Schoenborn (No. 82-4541), Schoenborn (No. 82-4339), Cruz (No. 82-4540), Hudson (No. 83-3161) and Sutton (No. 82-4539) timely filed this petition for writ of certiorari.

REASONS FOR GRANTING THE WRIT

I

AN IMPORTANT AND RECURRENT FEDERAL QUESTION WHICH SHOULD BE SETTLED BY THIS COURT IS WHETHER THE NEGLIGENT MANUFACTURER OF A DEFECTIVE PRODUCT PURCHASED BY THE MILITARY CAN ENJOY GREATER IMMUNITY THAN ITS SOVEREIGN FROM LIABILITY TO CIVILIAN BYSTANDERS INJURED BY ITS PRODUCT.

Without discussion, the Third Circuit indiscriminately ordered entry of judgment notwithstanding the verdict in Case No. 82-4541 (U.S.D.C.(E.D. Pa.)). This separate action brought by civilian Ursula Schoenborn on behalf of herself and her daughter Stephanie is based on the *independent injuries* they sustained as they stood at a civilian airshow within the zone of danger and witnessed the helicopter crash which killed pilot Schoenborn, seven other military personnel and thirty-eight civilian parachutists. App. A at 21. Case No. 82-4541 seeks damages under Pennsylvania law for the separate, independent tort of negligent infliction of emotional distress. *Sinn v. Burd*, 486 Pa. 146, 404 A.2d 672 (1979); *Pearsall v. Emhart Industries, Inc.*, 599 F.Supp. 207, 211-212 (E.D. Pa. 1984); *Niederman v. Brodsky*, 436 Pa. 401, 426 A.2d 84, 84-90 (1970). The jury did not determine the extent of the physical and/or emotional injuries suffered due to Judge Weiner's order consolidating the MDL 555 cases for trial on liability only. App. A at 6.

Case No. 82-4541 is *not* barred by *Feres v. United States*, 340 U.S. 135 (1950).[4] *Orken v. United States*, 239 F.2d 850

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[4] The cases of the 38 civilian parachutists also fall outside the bar of *Feres*.

(6th Cir. 1956) (heirs of serviceman's wife and children have wrongful death actions against the United States where USAF aircraft crashed into barracks killing serviceman and his family, despite *Feres* bar to suit by serviceman's heirs). Where the plaintiffs are not members of the armed services the federal interest in military discipline is not implicated. *Bynum v. FMC Corp.*, 770 F.2d 556, 573 (5th Cir. 1985).

As the Third Circuit noted, under Pennsylvania law or under federal law any "government contract defense" is a derivative form of sovereign immunity. *Valley Forge Gardens, Inc. v. James D. Morrissey, Inc.*, 385 Pa. 477, 483-484, 123 A.2d 888, 891 (1956); *McKay v. Rockwell International Corp.*, 704 F.2d 444, 451 (9th Cir. 1983), *cert. denied*, 464 U.S. 1043 (1984); *Koutsoubos v. Boeing Vertol*, 755 F.2d 352, 354 (3rd Cir. 1985), *cert. denied*, No. 84-1848 (Oct. 7, 1985). Normally, the defense exists, if at all, only where the contractor acts as an agent of the sovereign. *Yearsley v. W.A. Ross Construction Co.*, 309 U.S. 18, 20 (1940).

By using the "government contract defense" to bar Case No. 82-4541 the Third Circuit expanded the immunity available to the government military contractor beyond that available to the sovereign. Its opinion extends immunity to the contractor in cases where the civilian plaintiff is not barred from suing by *Feres*. Moreover, its opinion extends immunity to the prime contractor in cases where the contractor defendant is not barred from suing for indemnity or contribution under *Stencel Aero Engineering Corp. v. United States*, 431 U.S. 666, 667n.2 (1977) which involved only a subcontractor. *See, also, Lockheed Aircraft Corp. v. United States*, 460 U.S. 190, 191, 197n.8 (1983) (contractor may sue for indemnity where victim is civilian employee of the United States).

Whether the negligent manufacturer of a defective product purchased by the military can enjoy greater immunity than its sovereign from liability to civilian bystanders injured by its product is an important and recurrent federal question which justifies granting review under U.S.S.Ct. Rule 17.1(c). *See, e.g., In Re "Agent Orange" Product Liability Litigation*, 580 F.Supp. 1242, 1247-1254 (E.D. N.Y. 1984), *appeal dismissed*, 741 F.2d 161 (2d Cir. 1984) (validity of independent claims of wives and children of servicemen); *Malone v. Bowdoin*, 369 U.S. 643, 645 (1962) (question of scope of U.S. sovereign immunity justifies grant of certiorari).

II

REVIEW IS NEEDED TO RESOLVE A CONFLICT BETWEEN THIS CASE AND *BYNUM v. FMC CORPORATION*, 770 F.2d 556 (5th Cir. 1985) AS TO WHETHER, IN DIVERSITY ACTIONS, ANY *FEDERAL GOVERNMENT MILITARY CONTRACT DEFENSE* IS DETERMINED BY FEDERAL OR STATE CONTRACT AND/OR TORT LAW.

Reaching a unique and bizarre result, the Third Circuit purported to apply Pennsylvania tort law under *Brown v. Caterpillar Tractor Co.*, 696 F.2d 246 (3rd Cir. 1982) but actually applied its pet version of federal tort law under *Koutsoubos v. Boeing Vertol*, 755 F.2d 352 (3d Cir. 1985), *cert. denied*, No. 84-1848 (Oct. 7, 1985) to reverse the trial court and order entry of judgment notwithstanding the verdict based on its application of Pennsylvania contract law under *Hewes v. McWilliams*, 412 Pa. 270, 194 A.2d 339 (1963) to the federal contract between defendant Boeing and the U.S. Army. App. A at 10, 14, 18n.12 & 21. "[O]rdinarily federal law controls the construction and applicability of government contracts." *"Agent Orange"*,

580 F.Supp. 690, 705 & 597 F.Supp. 740, 846 (E.D. N.Y. 1984), *citing, Priebe & Sons, Inc. v. United States,* 332 U.S. 407, [411] (1947). The Third Circuit gave no reason for departing from this rule. As for its use of *Koutsoubos,* the Third Circuit perfunctorily stated, without any analysis of Pennsylvania law, that "[a]doption of the *Agent Orange* criteria, as interpreted by *McKay* and *Koutsoubos,* does not conflict with the government contractor defense as it currently exists under Pennsylvania law." App. A at 14.

In its reliance on state contract law the Third Circuit's opinion is unique.

In its purported reliance on state tort law the Third Circuit's opinion is squarely in the midst of a current controversy. *McKay* and *Koutsoubos,* being admiralty cases, did not present this choice of law issue. In *"Agent Orange"* the Second Circuit "did not decide whether potential defenses implicating federal interests such as the government contract defense would be governed by federal or state law." *In re Diamond Shamrock Chemicals Co.,* 725 F.2d 858, 861n.2 (2d Cir. 1984), *cert. denied,* ____ U.S. ____, 104 S.Ct. 1417 (1984). The district court analyzed the problem and determined:

> "It must be concluded that federal law applies of its own force under the Supremacy Clause to the government contract defense. In the event federal common law were not applied of its own force, the same result would be reached under *Erie* using the national consensus law approach set forth in the choice of law opinion [580 F.Supp. 690, 692-713 (E.D. N.Y. 1984)]."

"Agent Orange", 597 F.Supp. 740, 847 (E.D. N.Y. 1984). The Fifth Circuit just applied federal common law to bar a diversity action by a National Guardsman injured on a

federal enclave. *Bynum v. FMC Corp., supra,* 567, 574 & 577; *Bynum v. General Motors Corp.,* 599 F.Supp. 155, 156n.1 (N.D. Miss. 1984). Without discussion and as an unnecessary alternative ground the Seventh Circuit apparently applied federal law in *Tillet v. J.I. Case Co.,* 756 F.2d 591 (7th Cir. 1985).

The Third Circuit applies state law. *Brown, supra,* 247-249. Curiously, *Brown* has never been cited with approval by any Pennsylvania state court. The Fifth Circuit recently refused to create a government contract defense under Texas law. *Hansen v. Johns-Mansville Products Corp.,* 734 F.2d 1036 (5th Cir. 1984), *cert. denied,* ____ U.S. ____, 105 S.Ct. 1249, 1250 (1985). Previously, the Fifth Circuit used United States Supreme Court cases to determine that sovereign immunity did not bar suit then applied Georgia law to determine liability. *Whitaker v. Harvell-Kilgore Corp.,* 418 F.2d 1010, 1014 (5th Cir. 1969), *rehearing denied,* 424 F.2d 549 (5th Cir. 1970). Other federal courts have applied state law without discussion. *See, e.g., Ellis v. Bell Helicopter Textron, Inc.,* No. N-82-1341 (D. Md. May 18, 1985) *printed in* Aviation Litigation Reporter (June 17, 1985) 3434, *appeal docketed,* No. 85-1704 (4th Cir. 1985) (Maryland law); *Foster v. Day & Zimmerman, Inc.,* 502 F.2d 867 (8th Cir. 1974) (Iowa law); *Johnston v. United States,* 568 F.Supp. 351 (D. Kan. 1983) (Kansas law); *Jenkins v. Wittaker Corp.,* 551 F.Supp. 110 (D. Hawaii 1982) (Hawaiian law).

Only three state courts have published opinions on the government contract defense in the context of federal military contracts. *McLaughlin v. Sikorsky Aircraft,* 148 Cal.App.3d 203, 211, 195 Cal.Rptr. 764 (1983) applied federal law. *Casabianca v. Casabianca,* 104 Misc.2d 348, 428 N.Y.S.2d 400 (Sup.Ct. 1980) and *Sanner v. Ford Motor Co.,* 144 N.J. Super. 1, 364 A.2d 43 (1976), *aff'd,*

154 N.J. Super. 407, 381 A.2d 805 (1977), *cert. denied,* 75 N.J. 616, 384 A.2d 846 (1978) applied state law.

Resolution of the conflict between the Fifth and Third Circuit Courts of Appeals as to whether federal or state tort and/or contract law should apply to any federal government military contract defense justifies review under U.S.S.Ct. Rule 17.1 (a) and (c). *See, e.g., Bisso v. Inland Waterways Corp.,* 349 U.S. 85, 90-91 (1954) (question of whether a party may validly contract against all liability for its own negligence justifies grant of certiorari); *Curtis v. Loether,* 415 U.S. 189, 191 (1974) (conflict between court of appeals and district court justifies grant of certiorari where important federal question implicating U.S. CONST. Amend. VII rights is at issue); *Bingler v. Johnson,* 394 U.S. 741 (1969) (conflict between circuits resolved by granting review).

III

THE THIRD CIRCUIT'S DEMAND THAT A JUDGMENT NOTWITHSTANDING THE VERDICT BE ENTERED IN FAVOR OF THE NEGLIGENT MANUFACTURER OF A DEFECTIVE HELICOPTER WHICH PROXIMATELY CAUSED THE PLAINTIFFS' INJURIES SO IMPAIRED THEIR RIGHTS TO A JURY TRIAL AS TO CALL FOR AN EXERCISE OF THIS COURT'S POWER OF SUPERVISION.

The Third Circuit reversed the trial court and ordered entry of judgment notwithstanding the verdict in favor of the negligent manufacturer of a defective helicopter which proximately caused the death of thirty-eight civilian parachutists and eight servicemen and the injuries suffered by two civilian bystanders at a civilian airshow. App. A at 21. It did so by "[a]doption of the *Agent Orange* criteria, as interpreted by *McKay* and *Koutsoubos*"

as applied to the purchase order for Helicopter 22292 interpreted under Pennsylvania contract law and U.S. Army knowledge of two 1966 crashes of CH-47 helicopters resulting from forward transmission failures. App. A at 14-20. It did so in spite of a special jury verdict on liability in favor of all plaintiffs finding that:

(1) The manufacturer was *negligent;*

(2) The helicopter was *defective;*

(3) The manufacturer had *final control* of the helicopter's design; and

(4) The negligence and defect both *proximately caused* the fatal accident. App. E.

It did so in spite of evidence that prior to the purchase order for production of Helicopter 22292 the manufacturer had developed and tested the CH-47 helicopter design, including its design specifications, in response to broad U.S. Army mission and performance requirements. App. A at 5; App. B at 25a. In other words, the purchase order merely requested production of the manufacturer's *preexisting product* sold to the U.S. Army and to foreigners, including civilian users like British Airways. The Third Circuit did so in derogation of plaintiffs' *crashworthiness* theory and in spite of evidence that, unknown to the U.S. Army, regardless of the reason for any foreseeable transmission failure, insufficient clearance between the helicopter airframe and the tandem rotor assembly synchronizing shaft at Station 120 would cause the synch shaft to fracture thereby allowing the fore and aft rotor blades to strike and sever, depriving the helicopter of both lift and physical integrity. It did so in spite of evidence that the *manufacturer actually knew* of the specific problem in 1966 but *failed to tell the U.S. Army* (App. F) and failed to measure the insufficiency of the

clearance until *after* this fatal accident. It did so despite the fact that Pennsylvania law has never insulated *negligent* government suppliers from liability. *Brown, supra,* 254; *Patraka v. Armco Steel Co.,* 495 F.Supp. 1013, 1020 (M.D. Pa. 1980); *Prost v. Caldwell Store, Inc.,* 409 Pa. 421, 187 A.2d 273 (1963).

It did so in derogation of plaintiffs' rights to trial by jury. U.S. CONST Amend. VII (1791). " 'Courts are not free to reweigh the evidence and set aside the jury verdict merely because the jury could have drawn different inferences or conclusions or because judges feel that other results are more reasonable.' " *Gallick v. Baltimore & Ohio R. Co.,* 372 U.S. 108, 115 (1963). A court of appeals "must view the record in the light most favorable to plaintiffs and affirm the judgment unless the record lacks even that minimum quantum of evidence on which a jury reasonably might have based its verdict." *Stanton by Brooks v. Astro Pharmaceutical Products,* 718 F.2d 553, 563 (3d Cir. 1983); *Neville Chemical Co. v. Union Carbide Corp.,* 422 F.2d 1205, 1211-1212 (3d Cir.), *cert. denied,* 400 U.S. 826 (1970).

The Third Circuit so far departed from the accepted and usual course of judicial proceedings as to justify granting review under U.S.S.Ct. Rule 17.1(a). *See, e.g., Usner v. Luckenbach Overseas Corp.,* 400 U.S. 494, 496 (1971) (issue considered under 28 U.S.C. §1292(b) and converted into a final judgment by order of the court of appeals subject to certiorari); *Rogers v. Missouri Pacific Railroad Co.,* 352 U.S. 500, 501 (1957) (question of whether court invaded province of the jury justifies grant of certiorari).

IV

ONLY THIS COURT CAN REPLACE THE INCOHERENT CRITERIA USED BY THE THIRD CIRCUIT WITH APPROPRIATE GUIDELINES FOR PROVING THE CORRECT LEGAL ELEMENTS OF ANY FEDERAL GOVERNMENT MILITARY CONTRACT DEFENSE.

The trial court certified the judgment on liability in favor of plaintiffs for interlocutory review under 28 U.S.C. §1292(b) (1982) to determine "[w]hether the [c]ourt applied the correct legal standard concerning the so-called government contract defense." The trial court finding Pennsylvania law under *Brown* inadequate used the interim *"Agent Orange"* criteria as a guideline and rejected the *McKay* "or approved" element. App. B at 26a-28a. The Third Circuit rejected this formulation and substituted "[a]doption of the *Agent Orange* criteria, as interpreted by *McKay* and *Koutsoubos*". App. A at 14. In a feat of semantic acrobatics, *Koutsoubos* equates the *McKay, supra,* 451, "United States established, or approved, reasonably precise specifications" criterion with the *"Agent Orange"*, 534 F.Supp. 1055, "government established the specifications" criterion. *Koutsoubos, supra,* 355. The Third Circuit also incorporates an interim *"Agent Orange"* (534 F.Supp. 1055) criterion which had been modified. *"Agent Orange"*, 597 F.Supp. 740, 847-850 (E.D. N.Y. 1984). The modification changes the third *"Agent Orange"* criterion to provide:

> "A plaintiff would be required to prove, along with the other elements of his cause of action, that the hazards to him that accompanied use of Agent Orange were, or reasonably should have been known, to the defendant. The burden would then shift to each individual defendant to prove (1) that the *govern-*

> *ment knew as much as or more than that defendant knew or reasonably should have known* about the dangers of Agent Orange or (2) even if the government had had as much knowledge as that defendant should have had, it would have ordered production of Agent Orange in any event and would not have taken steps to reduce or eliminate the hazard. (emphasis added) *"Agent Orange"* 597 F.Supp. 849.

The result is a totally incomprehensible legal standard which the Third Circuit applies so as to insulate all government suppliers from all liability to third-parties, civilians and servicemen alike, for injuries caused by all products "approved", i.e., purchased by the military.

Only this Court can eliminate the total chaos which currently exists. State courts rarely get the opportunity to decide these cases. The lower federal courts are applying a hodgepodge of different criteria irrationally chosen from a variety of legal theories. In *Ellis v. Bell Helicopter Textron, Inc.,* No. N-82-1341 (D. Md. May 18, 1985) *printed in* Aviation Litigation Reporter (June 17, 1985) 3434, 3436, *appeal docketed,* No. 85-1704 (4th Cir. 1985) the court speaks of the "military contractor defense." In *Johnston v. United States,* 568 F.Supp. 351, 353 (D. Kan. 1983) the court distinguishes the "contract specification defense" originated in *Ryan v. Feeny & Sheehan Building Co.,* 239 N.Y. 43, 145 N.E. 321 (1924) from the "government contract defense" originated in *Yearsley v. W.A. Ross Construction Co.,* 309 U.S. 18 (1940).

"The contract specification defense applies to products manufactured to the order and specification of another, whether that other be the government or a private party." *Johnston, supra,* 354. Hence, this defense only applies to detailed design specifications conceived, prepared and promulgated by the government. Note, "Liability of a

Manufacturer for Products Defectively Designed by Government," 23 B.C.L.REV. 1025, 1037, 1037n.52 (1982). It does not apply where the contract sets forth a patently unsafe design or a purchase description of a contractor's pre-existing product or a performance specification defining only function. *Id; Johnston, supra,* 354. It does not apply where the manufacturer has special knowledge or expertise. *Id.* State courts are split on whether this defense applies to strict liability, as well as, negligence and on whether the contractor may exercise any discretion. Note, *supra,* 1036; *Johnston, supra,* 354. Thus, the "contract specification defense" does not insulate the contractor from liability for his own negligence. *Brown, supra,* 253.

The "government contract defense" is a form of "derivative sovereign immunity" *Pratt v. Hercules, Inc.,* 570 F.Supp. 773, 801 (D. Utah 1982). The scope of federal sovereign immunity is constricting. *See, e.g.,* Tucker Act, 28 U.S.C. §1491 (1887); Federal Tort Claims Act, 28 U.S.C. §§1346(b), 2402, 2671-2680 (1946); *Lockheed Aircraft Corp., supra; Bivens v. Six Unknown Named Agents of Federal Bureau of Narcotics,* 403 U.S. 388 (1971); U.S. CONST. Amend. 5 (1791); Administrative Procedure Act, 5 U.S.C. §§702 & 703 (1976); 28 U.S.C. §1331 (1980). Logically, the "government contract defense" does not insulate the contractor from liability where its sovereign is not immune. *McKay, supra,* 451.

Reflecting the judiciary's desire not to interfere with policy-making by the political branches of government, the "federal government military contract defense" is similar to the act of state doctrine. *Bynum, supra,* 570. "Purely commercial activity ordinarily does not require judicial forebearance under the act of state doctrine. *Northrup Corp. v. McDonnell Douglas Corp.,* 705 F.2d

1030, 1048n.25 (9th Cir. 1983), *cert. denied,* 104 S.Ct. 156 (1984) "[M]ere governmental approval or foreign government involvement which the defendant had arranged does not provide a defense." *Timberlane Lumber Co. v. Bank of America, N.T.&S.A.,* 549 F.2d 597, 606 (9th Cir. 1976). In *Williams v. Curtis-Wright Corp.,* 694 F.2d 300, 304 (3d Cir. 1982) the Third Circuit rejected the argument that the act of state doctrine forbade scrutinizing military procurement decisions of foreign countries concerning A-4 skyhawk surplus J-65 jet aircraft engines. In *Northrup, supra,* 1047, where one military manufacturer sued another based on marketing and subcontracting of F-18 aircraft the court held:

> "The mere fact that the challenged conduct occurred in a regulated industry does not alone alter its private commercial character. The issues presented for trial are not political questions — they are legal issues, involving private commercial activity which the judiciary is uniquely equipped to resolve. Northrup's claims do not seek the kind of direct interjection of the judiciary into the Government's procurement activity that would transform this private suit into a political question."

In a constitutional democracy, excessive deference to the military is both unnecessary and dangerous. *See, e.g., Korematsu v. United States,* 323 U.S. 214 (1944); Public Papers of the Presidents, Dwight D. Eisenhower, 1960-1961, §421 Farewell Radio and Television Address to the American People, January 17, 1961 (1961).

If grounded in cost control concerns, these defenses are overbroad and ill-conceived. In most cases, the United States Treasury has already paid for third-party liability insurance procured by the government contractors.

> "[T]he basic position of DOD [U.S. Department of Defense], for some time, has been to leave the contractor with that responsiblity which he would have under general commercial law. Certainly, DOD has not attempted to affect the rights of third parties against contractors, and it is highly questionable whether this could be done in any event. Nor has DOD attempted to limit a contractor's responsiblity for injury to any persons. A contractor is required, therefore, to protect himself, in a reasonable manner, and this may mean insuring or creating a reserve for self-insurance. Under DOD's cost-reimbursement contracts, there is a specific provision incorporated into the contracts which requires the contractor to take out adequate insurance [32 C.F.R. § 7-203-22 (1972)]. Under fixed-price contracts, the regulations are silent .... The rule of thumb is that a contractor will be able to insure or provide some type of reserve to the extent that he would do so under normal business practices were it a commercial sale. To the extent that is done, such costs are allowable [41 C.F.R. §1-15 (1972) & 32 C.F.R. § 15 (1972)]."

M. RISHE, "The Product Liability Dilemma Under Government Sales," 34 U. PITT.L.REV. 177, 195-196 (1972). Insulation of the contractors from liability for their own negligence thus creates a windfall (*Johnston, supra,* 357) and deprives the U.S. government of the full value of its investment.

At the time of the Mannheim accident Helicopter 22292 was being used for entertainment and civilian transportation "like an ordinary consumer product purchased by the armed forces" which would not be subject to the defense as articulated in *McKay, supra,* 451. *See, also, Jenkins, supra,* 114. Helicopter 22292 was produced based on a

purchase order which specified a pre-existing Boeing product which would not be subject to the defense as articulated in *Johnston, supra,* 354. *See, also, In Re Related Asbestos Cases,* 543 F.Supp. 1142, 1152 (N.D. Cal. 1982). The CH-47 helicopter was developed based on a contract which set forth only broad functional mission and performance specifications which would not be subject to the defense as articulated in *McKay, supra,* 450, or *"Agent Orange",* 534 F.Supp. 1055-1056. Boeing diverted the U.S. Army's attention to a superficial problem rather than focusing on the ultimate defect, thus the U.S. Army's partial knowledge would not insulate Boeing from liability under the defense as articulated in *Shaw v. Grumman Aerospace Corp.,* 593 F.Supp. 1066, 1073 (S.D. Fla. 1984), *appeal docketed* No. 84-5803 (11th Cir. 1984). Boeing negligently designed the CH-47 helicopter, thus it would not be exempt from liability under the defense as articulated in *Brown, supra,* 253; *Tozer v. LTV Corp.,* 18 CCH Avi.Rptr. 18,215, 18,216 (D. Md. 1984), *appeal docketed,* No. 84-1907 (4th Cir. 1984); and *Ellis, supra,* 3449. Boeing did not recommend any ECP to correct the basic clearance problem, therefore, no U.S. Army negligence superseded Boeing's negligence as a cause of the deaths and injuries, as the jury found. App. E; *accord, Shaw, supra,* 1070. Moreover, even if any ECP had been designed to solve the problem, Boeing's demand that it profit by its mistakes at taxpayers' expense would not eradicate its negligence as noted in *Ellis, supra,* 3439.

The importance of this federal question and the need for guidance by this Court justify review under U.S. S.Ct. Rule 17.1(c). *See, e.g., Silkwood v. Kerr-McGee Corp.,* ____ U.S. ____, 104 S.Ct. 615 (1984) (state law question related to highly regulated federal area supports grant of certiorari); *Montana v. Kennedy,* 366 U.S. 308, 309 (1961) (harshness of result justifies grant of certiorari).

V

PETITIONERS ADOPT PORTIONS OF THE PETITION FOR CERTIORARI CONCURRENTLY FILED BY THE PLAINTIFFS LISTED IN APPENDIX G TO THE EXTENT THAT THOSE ARGUMENTS ARE NOT INCONSISTENT WITH THE ONES RAISED ABOVE.

CONCLUSION

If the decision of the Third Circuit is allowed to stand, it will eliminate completely the legitimate claims of all civilians and military personnel as well as their heirs against military contractors who provide defectively designed products to the military. It will accomplish the end of perpetuating defects in the design of military products as a result of providing to military contractors and their insurers a windfall at the expense of those injured or killed by the defectively designed products.

Petitioners respectfully request that this Court issue a Writ of Certiorari to consider all of the questions presented for review.

Dated: October 22, 1985

Respectfully submitted,

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PETITIONERS' APPENDIX

APPENDIX A

UNITED STATES COURT OF APPEALS
FOR THE THIRD CIRCUIT

No. 84-1446

IN RE: AIR CRASH DISASTER AT
MANNHEIM GERMANY ON 9/11/82

(D. C. MDL #555)

URSULA J. SCHOENBORN, as
Executrix of the Estate of
LEON EDWARD SCHOENBORN, Deceased
vs.
THE BOEING COMPANY
(D. C. Civil No. 82-4339)
THE BOEING COMPANY,
Appellant

On Appeal from the United States District Court
for the Eastern District of Pennsylvania
D. C. No. MDL #555

Argued March 21, 1985
Before: HUNTER and GARTH, Circuit Judges,
and GERRY, District Judge*

(Opinion filed June 28, 1985)

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*Honorable John F. Gerry, United States District Judge for the District of New Jersey, sitting by designation.

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OPINION OF THE COURT

GARTH, Circuit Judge:

This appeal requires us once again to explore the parameters of the government contractor defense in product liability actions involving an alleged design defect. See *Koutsoubos v. Boeing Vertol,* 755 F.2d 352 (3d Cir. 1985); *Brown v. Caterpillar Tractor Co,* 741 F.2d 656 (3d Cir. 1984).

Plaintiffs in this action are the survivors and personal representatives of servicemen who died in the crash of a Boeing-Vertol helicopter near Mannheim, West Germany, on September 11, 1982. In answering special interrogatories, a jury found Boeing liable to the plaintiffs. Because we find that the government contractor defense applies to this claim and that the district court erred in submitting the case to the jury, we reverse and remand the case for entry of judgment notwithstanding the verdict in favor of Boeing-Vertol.

I.

On September 11, 1982, a helicopter crashed near Mannheim, West Germany. The helicopter, a U.S. Army CH-47C "Chinook" (No. 22292), was manufactured and assembled in Pennsylvania by Boeing-Vertol, a division of Boeing. As a result of the accident, all forty-six crew members and passengers on board were killed.

On the date that the accident occurred. Helicopter 22292 was carrying a number of British, French, and German parachutists who planned to jump when the helicopter reached an altitude of 12,000 feet. At approximately 10,500 feet, the helicopter began to descend and notified ground control that it was returning for landing.

The helicopter's pilot stated that he had heard a noise from the rear of the craft and that a flicker had been observed on the master caution panel. At between 800 and 1,000 feet, pieces of the helicopter then began to fall, including the aft (rear) rotor blades, followed by the aft transmission. The helicopter then turned 180 degrees, lost airspeed and fell vertically. It exploded and burned on impact.

An understanding of the mechanics of the helicopter transmission is essential to an understanding of the issues raised in this case. Helicopter 22292 was a tandem-rotor helicopter on which the paths of the forward and aft rotor blades intersected. To ensure proper flight, all components of the drive system that transmitted power to the forward and aft rotor blades had to be synchronized.

Power from engines in the rear of the aircraft was transmitted to the forward and aft transmissions through a drive train consisting of aluminum shafts linked to each other by flexible couplings suspended within a protective tunnel along the top of the helicopter airframe. These shafts, which linked together, formed the synchronizing or "sync" shaft which rotated at a constant speed. The design clearance between the sync shaft and the tunnel floor was 0.5 inches, plus or minus normal manufacturing tolerances. This clearance was uniform throughout the tunnel, including at Station 120, the point at which the sync shaft fractured due to contact and friction.

The forward-most section of the sync shaft was connected to the pinion shaft. The pinion shaft, a thick steel cylinder with a gear on the forward end, meshed with the main transmission gears that drive the forward rotor blades. The pinion shaft was held in place within the transmission by three sets of steel bearings which, in normal operation, permitted the pinion to move no more

than .0081 of a degree from dead center. The pinion bearings required adequate lubrication to function properly.

Post-accident investigation suggested the following sequence of events: (1) the pinion assembly of the forward transmission failed due to insufficent lubrication because of clogged oil jets; (2) the forward synchronizing driveshift was severed by contact with an airframe bulkhead; and (3) the forward rotor blades struck and severed the aft rotor blades.

Helicopter 22292 was built by Boeing under a 1974 government contract. Helicopter of the Chinook type were first developed by Boeing and the Army in the 1960's. Boeing developed the CH-47 design in response to Army mission and performance requirements. The Army approved the design, inspected prototypes, implemented design changes, then approved the design for production in the early 1960's. In 1966, two prior accidents involving Chinook helicopters (Nos. B-67 and B-75) were investigated by both Army and Boeing. In each instance, Boeing concluded that lubrication starvation caused bearing failures which, in turn, caused the pinion shaft to be displaced. This displacement resulted in the ultimate failure of the synchronizing shaft. As a consequence of these investigations, Boeing suggested multiple design changes in the forward transmission system.[1] The Army approved

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[1]The following changes were proposed:

A. Place indicating buttons on forward and aft filters. Engineering Change Proposals (ECP) 418, 419.

B. Install redundant oil jets — three at each bearing. ECP 420, 421.

C. Install a screen in the lubrication line before oil reaches jets. ECP 422.

certain changes, but rejected a proposed change which would have provided a separate oil line leading to the pinion bearings and equipped with a fine mesh screen to filter out particles (Engineering Change Proposal (ECP) 422) (see note 1C below).

As a result of the Mannheim crash, numerous actions were brought against Boeing by foreign and American personal representatives and next-of-kin.[2] The asserted theories of liability included breach of warranty, negligence, and strict liability under section 402A of the Restatement (Second) of Torts. By order of October 25, 1983, the District Court for the Eastern District of Pennsylvania consolidated all cases for purposes of trial on the issue of liability. *In Re Air Crash Disaster at Mannheim, Germany,* 575 F. Supp. 521 (E.D. Pa. 1983). The court further decided that Pennsylvania law would control all issues of liability in all cases and that, with respect to the foreign plaintiffs' damage claims, Pennsylvania law would also govern. 575 F. Supp. at 527.

D. Improve oil drainage at pinion bearings. ECP 442.

E. Incorporate improved chip detector (to detect metal flakes in lubricant which result from metal breakdown). ECP 153.

F. Incorporate lock nut positive retention at overhaul. ECP 296, 295, 297.

G. Provide close tolerance nuts for high speed drive shaft applications. ECP 505.

[2]Over forty separate actions were filed in the Eastern District of Pennsylvania. Two additional actions, brought by surviving relatives of German decedents, were filed in the Northern District of California. Subject matter jurisdiction was founded on diversity of citizenship in each instance. By order of the panel on Multidistrict Litigation, two California cases were transferred to Pennsylvania, pursuant to 28 U.S.C. § 1407.

Trial was bifurcated with the issues of liability and damages to be tried separately. A jury trial was held on the issue of liability. Plaintiffs called several experts to testify about helicopter design and specifically about the aspects of the CH-47C design that contributed to the crash. Much of this testimony focussed on the rupture of the sync shaft at station 120, a rupture which, by agreement of all of the experts, occurred after the failure of the forward transmission had permitted displacement of the pinion gear. This displacement in turn allowed the sync shaft to rub against the aircraft's structure, weakening the sync shaft and, according to plaintiff's experts, causing the shaft's rupture when power was applied to the transmission. Plaintiff's expert, Angelo A. Coronato testified to four specific defects in the transmission design.[3] Three of these defects related to the transmission itself, while one defect focussed on the construction of the sync shaft.

Plaintiffs also presented some evidence that Boeing was aware that the sync shaft had failed due to rubbing at station 120 in the prior crashes of the CH-47C design. Plaintiffs charged that Boeing failed to inform the Army of its conclusions that sync shaft failure was implicated in

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[3]Coronato testified to the following defects:

1. The lack of an adequate chip detector sufficiently sensitive to give the pilot warning of a bearing failure.

2. The lack of a thermal probe in the transmission to give the pilot warning of a bearing failure.

3. Failure to fabricate ball bearing retainers of steel rather than bronze, since steel chips are more easily detected.

4. Failure to construct the sync shaft of more abrasion resistant steel rather than aluminum.

the crash or suggest any modification of the sync shaft design.

Boeing asserted four specific defenses to the plaintiffs' claims that the helicopter was negligently designed and defective: (1) that the government contractor defense shielded Boeing from liability; (2) that ECP 422, rejected by the Army, would have prevented the Mannheim accident;[4] (3) that the Army, by its cleaning process which included sand-blasting the transmission with walnut shells, improperly maintained the helicopter;[5] and (4) that the Army thereby substantially changed the product's condition. Boeing's motion for a directed verdict was denied. The following special interrogatories were submitted to the jury:

1. Was the defendant Boeing-Vertol negligent?

2. Was the negligence of Boeing-Vertol a proximate cause of the accident?

3. Was the Government's maintenance a superseding cause of the accident?

4. Did the defendant Boeing-Vertol have final control of the design of the aircraft?

5. Was the aircraft when delivered by defendant to the Army defective?

6. Was the defect a proximate cause of the accident?

The jury, answered each interrogatory in favor of the plaintiffs. Questions 1, 2, 4, 5, and 6 were answered "yes",

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[4]See Note 1. ECP 422 would have provided a screen in the oil line to screen out the sort of impurities which clogged the oil jets.

[5]The walnut shell residues, which were not screened, apparently clogged the oil jets which lubricated the bearings in the transmission.

question 3 was answered "no". The jury was not given an interrogatory which required an answer as to whether the Army had approved the specifications.

The district court denied Boeing's motion for judgment notwithstanding the verdict and for a new trial, specifically holding that the government contractor defense was inapplicable since Boeing initially developed the helicopter design based on the Army's designation of performance specifications, despite the fact that the Army subsequently approved those specifications. 586 F.Supp. 617.

The district court certified the applicability of the government contractor defense as a controlling question of law appropriate for immediate review under 28 U.S.C. § 1292(b). This Court accepted a petition for interlocutory review.[6]

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[6]In addition to its motion for judgment notwithstanding the verdict, Boeing asserts several errors as grounds for a new trial. Specifically, Boeing complains that the special interrogatories and jury charge did not adequately put the government contractor defense to the jury; that the jury was improperly allowed to consider the sync shift clearance as a design defect; that the district court improperly communicated with a juror ex parte; that the district court should have discharged the jury after plaintiffs' counsel referred to a "hold harmless" agreement between Boeing and the Army; that the district court improperly excluded evidence that the Army subsequently rejected the specific design modifications proposed by plaintiffs' experts; and that the district court improperly admitted evidence of subsequent remedial measures and evidence of manufacturing defects in other CH-47 helicopters. Given our disposition of this case, we have no need to reach these issues.

II.

This appeal requires us to determine, under Pennsylvania law,[7] the extent to which a contractor's participation in developing a design subsequently approved by the Army bars the contractor's assertion of the government contractor defense. In *Brown v. Caterpillar Tractor Co. (Brown II)*, 741 F.2d 656 (3d Cir. 1984) and *Brown v. Caterpillar Tractor Co. (Brown I)*, 696 F.2d 246 (3d Cir. 1982), we held that the government contractor defense was available under Pennsylvania law as a defense to strict products liability actions.[8] As we stated in *Brown II*,

> [T]he issue in a design defect case is whether the design of the product is or is not that called for by the specification.

741 F.2d 662. *Brown I* specifically rejected compulsion to comply with specifications by the government, as an element of the defense. Nonetheless, we left open the possibility that a different result might obtain where

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[7] In *Brown v. Caterpillar Tractor Co. (Brown I)*, 696 F.2d 246 (1982), we held that state, not federal law, governs the applicability of the government contractor defense. The law of Pennsylvania, as the place of the manufacture of the helicopter in question, is the appropriate law to apply to a products liability action, despite the fact that the accident occurred elsewhere, since Pennsylvania has the greatest interest in governing the liability of manufacturers within its state. See *Broome v. Antlers' Hunting Club*, 595 F.2d 921 (3rd Cir. 1979) (Pennsylvania applies governmental interest approach).

[8] Plaintiffs assert that the government contractor defense is unavailable in a case of negligent design, as was found by the jury here. In *Brown I*, however, we held that the Pennsylvania government contractor defense does apply to negligent design cases as well as to strict liability cases. See 696 F.2d at 250 n.8.

> the specifications are skeletal, the contract is negotiated, and the contractor, knowing of a high risk of serious harm, fails to install a relatively inexpensive safety device.

696 F.2d 254 n. 17.

The *Brown* cases did not address the issue, however, of the amount of contractor participation in the design permissible before the government contractor defense is lost. This court spoke to that issue as a question of federal law in *Koutsoubos v. Boeing Vertol,* 755 F.2d 352 (3d Cir. 1985). In *Koutsoubos,* a Navy crewman was killed when a Boeing-Vertol helicopter flipped over in the water. The crewman's administrator sued under admiralty jurisdiction. We affirmed the district court's grant of partial summary judgment in favor of Boeing on the government contractor defense despite affidavits that Boeing had originated many of the specifications for the helicopter.

In *Koutsoubos,* we recognized that in tort actions against military contractors, the government contractor defense derives from the doctrine of federal immunity established by *Feres v. United States,* 340 U.S. 135 (1950), and *Stencel Aero Engineering Corp. v. United States,* 431 U.S. 666 (1977). We also recognized the holding of the *Feres* and *Stencel* cases — that the Federal Torts Claim Act does not waive the government's sovereign immunity against actions by military personnel for service-related injuries — would be subverted if military contractors could be held liable to military personnel, since the contractors could pass the cost of that liability along to the government. *Koutsoubos,* 755 F.2d at 354.

Koutsoubos, however also acknowledged that the foundation of the *Feres-Stencel* doctrine is the constitutional precept of separation of powers:

> [H]olding military contractors liable [for design defects] would "thrust the judiciary into the making of military decisions. Although judges must decide cases arising from fields of endeavor of which they know little, their otherwise omnicompetence confronts its limits in military matters. At this point, it must be acknowledged, separation of powers becomes a proper conern."

Id. at 5 (quoting *McKay v. Rockwell International Corp.*, 704 F.2d 444, 449 (9th Cir. 1983)). *See also Stencel,* 666 U.S. at 673 (trial of serviceman's personal injury action against United States and military contractor would necessitate judicial "second-guessing [of] military orders: "This factor . . . weighs against permitting any recovery . . . .").

The separation of powers principle that bars judicial second-guessing of military judgments applies, regardless of the status of the plaintiffs, wherever recovery is sought for an alleged defect in a product designed for military use, as the Chinook helicopter in this case indisputably was. Clearly, however, where recovery is sought against a military contractor, no separation of powers concern arises unless the design in question represents a judgment by the military. Hence, government establishment or approval of the specifications in question is a significant element of the military contractor defense. *Koutsoubos,* 755 F.2d at 355.

In *Koutsoubos,* therefore, we adopted the three part test for the government contract defense in military equipment cases developed by Judge Pratt in *In re "Agent Orange" Product Liability Litigation,* 534 F.Supp. 1046 (E.D.N.Y. 1982). This test requires for a valid defense that: 1) the government establish the specifications for the product; 2) that the manufacturer complied with

these specifications; and 3) that the government knew as much as or more than the contractor about the hazards of the product as designed. 534 F.Supp. at 1055. The threshold issue here, as with the helicopter design in *Koutsoubos,* is whether the Army "established" the specifications for the CH-47C even though Boeing participated in the design of the aircraft.

In *Koutsoubos,* we decided that government approval of specifications developed through a continuous series of negotiations between the contractor and the military satisfied the first prong of the *Agent Orange* defense, even though the majority of specifications originated with the contractor. We thus accepted the Ninth Circuit's conclusion in *McKay v. Rockwell International Corp.,* 704 F.2d 444 (9th Cir. 1983), *cert. denied,* ____U.S. ____, 104 S.Ct. 711 (1984), that a military contractor, confronted with section 402A liability, might meet the first element of the defense where the government reviewed and approved a detailed set of specifications.[9] Thus, under *Koutsoubos,* the

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[9]In *McKay,* the Ninth Circuit found that the government contract defense was a logical outgrowth of the *Feres-Stencel* doctrine barring government liability either to servicemen injured on active duty or to third parties seeking indemnification for damages paid to military personnel injured during service. *See Feres v. United States,* 340 U.S. 135 (1950) (limiting liability to military personnel under Federal Tort Claims Act); *Stencel Aero Engineering Corp. v. United States,* 431 U.S. 666 (1977) (Federal Tort Claims Act precludes United States from indemnifying a third party for damages paid injured servicemen). Accordingly, the court articulated four specific requirements for successful assertion of the government contractor defense:

> To summarize, we hold that under the *Feres-Stencel* doctrine and the government contractor rule, a supplier of military equipment is not subject to section 402A liability for a design defect where: (1) the United States is immune from liability under *Feres* and *Stencel*; (2) the supplier proves that the United States established, or approved, reasonably precise specifica-

government contractor defense is available to a contractor that participates in the design of the product, so long as the government's approval consists of more than a mere rubber stamp. The defense is available so long as there is true government participation in the design.

Both *McKay* and *Koutsoubos*, however, were decided under federal law as cases within the admiralty jurisdiction. That the instant case involves Pennsylvania law does not alter the underlying rationales for recognizing the sufficiency of government approval. Adoption of the *Agent Orange* criteria, as interpreted by *McKay* and *Koutsoubos*, does not conflict with the government contractor defense as it currently exists under Pennsylvania law.

In *Koutsoubos*, as we have previously observed, we recognized several public policy justifications for the *Agent Orange* formulation of the government contractor defense in military product cases, including 1) the preservation of governmental immunity under *Feres v. United States*, 340 U.S. 135 (1950); 2) the inability of the judiciary to review military decisions; 3) the bargaining position of contractors; and, 4) encouraging participation by contractors in product design. The first of these justifications was recognized by the Pennsylvania Supreme Court in *Valley Forge Gardens, Inc. v. James D. Morrissey, Inc.*, 385 Pa. 477, 483-84, 123 A.2d 888, 891 (1956). In *Brown I*,

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tions for the allegedly defective military equipment; (3) the equipment conformed to those specifications; and, (4) the supplier warned the United States about patent errors in the government's specifications or about dangers involved in the use of the equipment that were known to the supplier but not to the United States.

904 F.2d at 451. The *McKay* court concluded that the record before it did not permit any determination whether the United States "set or approved reasonably-detailed specifications" for the products at issue. *Id.* at 453. The case was therefore remanded.

we predicted that Pennsylvania was likely to adopt the other justifications for the defense. 696 F.2d at 250-51 n.9, 252 n.12. Further, the third prong of the *Agent Orange* test, requiring equal or greater knowledge of hazards by the government, encourages contractors to warn the government of known hazards of the product, and limits the availability of the defense where the contractor fails to warn the government.

We thus hold that under Pennsylvania law, the government contractor defense is available despite the contractor's participation in development of the design, so long as the government has approved the design after a substantial review of the specifications.

III.

Having established the parameters of the government contractor defense, we now must determine whether this issue was appropriately submitted to the jury on the evidence presented at trial. Our review of the denial of entry of judgment notwithstanding the verdict is highly circumscribed; we may direct entry of judgment notwithstanding the verdict only where, upon review of all of the evidence and drawing all inferences in favor of the verdict winner, judgment for the verdict loser is demanded as a matter of law. *See Neville Chemical Company v. Union Carbide Corporation,* 422 F.2d 1205, 1211-12 (3d Cir.), *cert. denied,* 400 U.S. 826 (1970). In our review of the record, we have determined that this is a case in which a grant of judgment n.o.v. is required.

Of the three elements of the government contractor defense, only the first, requiring government approval of the specifications, and the third, requiring government knowledge of the product's hazards, are here in issue.

Plaintiffs do not claim that the second element, compliance with specifications, is not met.

A.

With respect to government approval of the specifications, the evidence is undisputed that helicopter 22292 was produced under contract number DAAJO1-74-C-0892, issued June 28, 1974. This contract required that the helicopter be constructed in accordance with the very details of the transmission and sync shaft designs which are claimed to be defective by plaintiffs. Indeed, the specifications incorporated by reference into the contract, all for the lubrication configuration of the transmission, for the type of chip detector used, and for the use of aluminum tubing in the sync shaft. Detail drawings of the aircraft also mandated the amount of sync shaft clearance in the sync shaft tunnel of the aircraft. Boeing was not permitted to deviate from these specifications without Army approval. Specifically, the contract provided that:

> Section J.22 Engineering Change Proposal Procedure
>
> * * *
>
> b. The official base line configuration is that configuration established by the delivery of CH-47 type Aircraft Serial Number 64-13107 (B-79) as modified by the minutes of the First Article Configuration Inspection of 14 and 15 January 1965, and as further modified by all Engineering Changes approved by the Government. For the purpose of this contract the configuration of the aircraft to be delivered hereunder is defined in Section "E", Item Number 0001, of this contract and as modified by approved Engineering Change Proposals.

> c. *The aforementioned configuration base line shall not be revised until an Engineering Change Proposal has been submitted by the Contractor and approved by the Government.*

(Emphasis added).

Not only does this contract clause establish the design of the CH-47C helicopter, including the design defects upon which the plaintiffs' case relies, but it also recites that the Army had inspected and modified the prototype aircraft. This clause alone is sufficient to satisfy the level of governmental participation in design so as to constitute "approval" under the *Koutsoubos* test discussed above. In addition, the undisputed testimony of one Boeing engineer was that the Army performed rigorous tests on the prototype aircraft. He testified that the Army had disassembled and reassembled the aircraft and tested the aircraft extensively in flight under severe conditions. According to this uncontradicted testimony, the Army then required certain design changes before the aircraft went into production. These changes were incorporated into helicopter 22292's design by Army direction.[10]

We have reviewed this evidence even though we are aware that the district court held that the government had approved the very design at issue. 586 F.Supp. at 716. Indeed, it would have been difficult, if not impossible, for

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[10]As recognized, military approval may be proved by a showing that the contract resulted from "continuous back-and-forth" between the contractor and the government, and that the government retained final decision-making authority. *Koutsoubos,* 755 F.2d at 355. Here, it is undisputed that the design for the CH-47C Chinook was the culmination of years of negotiations on earlier contacts for earlier models of the Chinook. As we have pointed out, it is also clear from the face of the contract that the Army retained final decision-making authority. *Koutsoubos v. Boeing Vertol.* 755 F.2d 352 (3d Cir. 1985).

the district court to have held otherwise since the contract in this case, which was drafted by the government, expressly incorporates by reference the detailed specifications that Boeing had provided.[11]

The contract provisions by themselves would be sufficient without more, to support a holding as a matter of law that the government approved the design at issue.[12] When we add to the contract provisions, which include the contract's approval procedure for engineering change proposals,[13] and the evidence cataloged above, it is evident that the Army retained final authority over the design of the helicopter and that therefore the government "approval" prong of the *Koutsoubos* test has been met.[14]

B.

The other element of the defense disputed by the parties has to do with the doctrine's requirement that the government have a knowledge of the product's hazards

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[11]The contract provided that:

> All specifications, exhibits, tables and drawings which are referenced in this contract but are not attached hereto are hereby incorporated herein by reference.

[12]In Pennsylvania, issues of contract interpretation are for the court and not the jury. *Hewes v. McWilliams,* 412 Pa.270, 194 A.2d 339 (1963). *See also Ram Construction Co. v. American States Insurance Co.,* 749 F.2d 1049 (3d Cir. 1984).

[13]See appendix at 136-42.

[14]The district court failed to frame an interrogatory with respect to government approval of specifications, despite a request by Boeing for such an interrogatory. Boeing, in its alternative argument for a new trial, focussed on this failure of the district court properly to put the government contractor defense to the jury. Because of our disposition of this case, we do not address this argument.

equal to, or greater than, the knowledge of the contractor. Here again, the evidence is undisputed that the Army was aware of two 1966 crashes of CH-47 helicopters resulting from forward transmission failure. Despite this knowledge the Army refused to implement a Boeing proposed modification of the transmission lubrication system which Boeing proposed in order to prevent bearing failures.

Plaintiffs contend that Boeing failed to share with the Army its knowledge that transmission failure would cause the sync shaft to rub at section 120, the point of minimum clearance. The plaintiffs point to a Boeing memorandum analyzing a helicopter incident that occurred in Viet Nam. The memorandum concluded that

> when the pinion bends two degrees, the synch shaft rubs hard on structure. This rub (hard) precipitates the immediate and ultimate failure.

Plaintiffs claim that there is no evidence that the Army had knowledge of this memorandum or its analysis of the consequences of transmission failure.

We are satisfied that the issue of the Army's knowledge of the sync shaft's tendency to fail as a result of transmission failure is irrelevant to the government contractor defense in this case. It is undisputed that the Army had knowledge that the forward transmissions in use on the CH-47C had a dangerous propensity towards bearing failure, yet the Army adhered to the original design specifications. The expert testimony presented by plaintiffs bore out the fact that the rubbing of the synchronization shaft would occur only after a "massive" failure of the transmission bearing (testimony of Joseph C. Paschal, appendix at 904). It is clear from the uncontradicted testimony concerning prior CH-47 accidents which resulted from faulty transmissions, that the Army *knew* that

the forward transmission was hazardous and that failure of the transmission would precipitate the crash of the helicopter. Yet, it is undisputed that prior to the execution of the 1974 contract under which helicopter 22292 was built, the Army had rejected proposed design modifications aimed at preventing such a transmission failure.

We conclude that the relevant knowledge which the Army must possess in order to satisfy the third prong of the *Koutsoubos* test is knowledge of a defect in an essential or key component of the mechanism (here, a helicopter transmission system): a defect which if uncorrected may result in the disabling of the aircraft. In this case, the record, as we have previously stated, is clear that the Army knew of the transmission's tendency to fail without warning due to lubrication starvation resulting from failure to screen the oil line. Indeed, as we have discussed earlier, for reasons not disclosed, the Army had specifically rejected the very modification proposed by Boeing which would have corrected this condition.

Moreover, it is undisputed that the sync shaft could fail only after transmission failure, and the record unqualifiedly discloses that the Army had as much knowledge of the transmission problems as did Boeing.

IV.

The plaintiffs' argument centered on the two main issues we have discussed. The plaintiffs contended that the Army approval of the helicopter specifications was insufficient to invoke the government contractor defense and that the Army did not know of the defect which caused the helicopter crash. We have addressed both issues in terms of the government contractor defense, and because it is undisputed that the Army approved the contract and knew of the transmission defect, it is appar-

ent that the government contractor defense shielded Boeing. Because the record which we have reviewed on this appeal not only establishes the Army's knowledge of the transmission defect, but also establishes that the specifications for the CH-47C Chinook represent a military judgment and were approved by the Army, no disputed issue of fact remained for jury consideration. This being so, the district court should have rendered judgment for Boeing as a matter of law.

Since Boeing-Vertol has established all the elements of the government contractor defense by undisputed evidence, we reverse and direct the district court to enter judgment n.o.v. in favor of Boeing-Vertol. Given this disposition, we need not reach Boeing's other claims of error by the district court.

Accordingly, the order of the district court dated May 14, 1984 will be reversed, with the direction that the district court enter judgment in favor of Boeing-Vertol.

A True Copy:

Teste:

Clerk of the United States Court of
Appeals for the Third Circuit

APPENDIX B

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF
PENNSYLVANIA

IN RE: AIR CRASH DISASTER AT MANNHEIM,
GERMANY ON SEPTEMBER 11, 1982
MDL #555

URSULA J. SCHOENBORN, et al

vs.

THE BOEING COMPANY

C.A. No. 82-4339

Filed May 15, 1984

MEMORANDUM OPINION AND ORDER

WEINER, J. May 14, 1984

This action arises out of a helicopter crash near Mannheim, West Germany on September 11, 1982. The helicopter (helicopter 22292), a United States Army CH-47C "Chinook", was designed, manufactured, and assembled in Pennsylvania by Boeing-Vertol, a division of defendant Boeing. As a result of the accident, all forty-six members of the crew and passengers on board were killed. The crash was caused by the blade to blade contact of the helicopter's tandem rotor blades due to a failure of its synchronization system.

Numerous actions were brought against Boeing by foreign and American personal representatives and next of kin. Because the liability issues in each action were identical, this court consolidated the actions in a Memorandum Opinion and Order dated October 25, 1983 and a jury trial was held on the issue of liability only. The jury

found in favor of the plaintiffs, and answered each of the special interrogatories in favor of the plaintiffs.[1]

Presently before this court is the motion of the defendant for a judgment notwithstanding the verdict or, in the alternative, a new trial. For the reasons which follow, the motion is denied.

MOTION FOR JUDGMENT N.O.V.

To grant a motion for a judgment n.o.v., the court must find as a matter of law that the plaintiff failed to adduce sufficient facts to justify the verdict. *Neville Chemical Co. v. Union Carbide Corp.*, 422 F.2d 1205, 1210 (3d Cir. 1970), *cert. denied*, 400 U.S. 826 (1970); *Marks v. Mobil Oil Corp.*, 562 F.Supp. 759, 764 (E.D. Pa. 1983). The motion "may be granted only when, without weighing the evidence, there can be but one reasonable conclusion as to the proper judgment." *Woodward and Dickerson, Inc. v. Yoo Hoo Beverage Co.*, 502 F.Supp. 395, 397 (E.D. Pa. 1980), quoting Moore's Federal Practice §50.07 [2] at 50-77. Moreover, on a motion for a judgment n.o.v., the evidence must be viewed in the light most favorable to the

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[1]The interrogatories read as follows:

1. Was the defendant Boeing Vertol negligent?

2. Was the negligence of Boeing Vertol a proximate cause of the accident?

3. Was the Government's maintenance a superseding cause of the accident?

4. Did the defendant Boeing Vertol have final control of the design of the aircraft?

5. Was the aircraft when delivered by the defendant to the Army, defective?

6. Was the defect a proximate cause of the accident?

party against whom the motion is made and all reasonable inferences must be drawn in that party's favor. *Monsen v. Consolidated Dressed Beef Co., Inc.,* 579 F.2d 793, 796 (3d Cir. 1978), *cert. denied,* 439 U.S. 930 (1978). *Accord, Blair v. Manhattan Life Insurance Co.,* 692 F.2d 296, 300 (3d Cir. 1982).

In support of the motion for a judgment n.o.v., defendant first invokes the government contractor defense. "In short, the government contract defense protects a government contractor for liability for acts done by him while complying with government specifications during execution of performance of a contract with the United States." *Hubbs v. United Technologies,* 574 F.Supp. 96, 98 (E.D. Pa. 1983). The defendant claims that it may assert the defense because helicopter 22292 was built in strict compliance with an unambiguous government contract.

The plaintiffs, on the other hand, assert that the government contractor defense is applicable only where the specifications set forth in the contract originate with the government. Thus, they claim that the defense is unavailable in this case because the evidence purportedly shows that the government merely supplied the defendant with a general requirement governing the design of the synchronization system while the defendant was the originator of its plans and specifications. Even if the defense is applicable, the plaintiffs contend that it may be overcome by showing that the helicopter was negligently designed and was defective. Given this characterization of the government contractor defense, they aver that the defendant's negligence was an issue to submit to the jury and that the jury's finding of negligence was supported by the evidence.

The evidence introduced at the trial tended to establish that the CH-47 helicopter was designed in the following

manner: The Army submitted to Boeing mission requirements and performance specifications. 8 T.R. at 129-130.[2] Essentially, these mission requirements and performance specifications established the parameters of what the Army wanted the helicopter's capabilities to be, e.g. how much weight the helicopter should lift or what its dimensions should be. Pursuant to these requirements, Boeing developed detailed specifications and drawings. 8 T.R. at 129-130; 9 T.R. at 27. These specifications and drawings were submitted to and approved by the Army. 8 T.R. at 73, 130. Included in these design plans were the specifications and drawings relating to the CH-47's synchronization system, whose failure caused helicopter 22292 to crash. 8 T.R. at 121-122. Under the contract between the Army and Boeing, once the helicopters were in production, the Army's approval was required before any design changes can be made. 8 T.R. at 58. There was no contention by the plaintiffs that Boeing failed to comply with the contract specifications in manufacturing helicopter 22292. Based upon the foregoing, this court must now consider whether defendant Boeing is insulated from liability by virtue of the government contractor defense.

The Third Circuit, applying Pennsylvania law in a diversity action, has held that the government contractor defense is available to a defendant, not only in negligence actions, but in actions brought on strict liability and breach of warranty theories as well. *Brown v. Caterpillar Tractor Co.*, 696 F.2d 246 (3rd Cir. 1982). In *Brown*, an Army reservist was injured when a felled tree came over the blade of a bulldozer he was operating and struck him. The plaintiff sued Caterpillar claiming that he would not

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[2]All references to the trial record will be cited by the day of the trial followed by "T.R." and the page.

have been injured if the bulldozer had been equipped with a protective structure around the passenger seat.

The *Brown* case has not clearly delineated the elements of the government contractor defense. However, *Brown* did expressly hold that a government contractor need not show that it was compelled to follow government specifications. 696 F.2d at 253-254. Thus, a contractor's assertion of the defense will not necessarily be defeated merely because the contractor could have suggested design changes different from the contract specifications. The court stated that the obligation of a contractor is to "execute the government specifications 'carefully.' " 696 F.2d at 254. Accordingly, the Third Circuit reversed the district court's grant of summary judgment to the defendant and remanded for a determination of whether the bulldozer was defective and whether Caterpillar complied with the contract specifications.

While the *Brown* court declined to make compulsion an element of the government contractor defense, it also declined to make any instance of government involvement in creating the specifications a basis for insulating a contractor from liability. Indeed, the court noted its concern for situations in which the government submits only generalized specifications. "We are particularly troubled by the scenario in which the specifications are skeletal, the contract is negotiated, and the contractor, knowing of a high risk of serious harm, fails to install a relatively inexpensive safety device." 696 F.2d at 254, n. 17. The record, however, did not present the court with this scenario. Therefore, the court declined to state what it would do if faced with it.

A more precise statement of the proof required before a government contractor may be insulated from liability was provided by the Eastern District of New York in *In re*

Agent Orange Product Liability Litigation, 534 F.Supp. 1046 (E.D. N.Y. 1982). The *Agent Orange* approach has subsequently been adopted by two courts in this district. *Hubbs v. United Technologies,* 574 F.Supp. 96 (E.D. Pa. 1983); *Koutsoubos v. Boeing Vertol, Div. of Boeing Co.*, 553 F.Supp. 340 (E.D. Pa. 1982). Under this approach, in order to succeed on the government contractor defense in the case *sub judice*, the defendant must establish the following:

> (1) That the government established the specifications for the CH-47 helicopter;
>
> (2) That the CH-47 helicopter manufactured by the defendant met the government's specifications in all material respects; and
>
> (3) That the government knew as much or more than the defendant about the hazards to people that accompanied the use of the CH-47 helicopter.

See Hubbs, 574 F.Supp. at 98; *Agent Orange*, 534 F.Supp. at 1055.

With regard to the first element of the defense, the *Agent Orange* court stated that "all that is necessary . . . is for defendant to prove that the product it supplied was a particular product specified by the government." 534 F.Supp. at 1056. However, the court qualified this requirement by stating that, "If it should appear that the contract set forth merely a 'performance specification,' as opposed to a specified product, then the government contract defense would be far more restricted than described here." *Id.* As previously stated, the testimony in the case *sub judice* established that the Army submitted to Boeing mission requirements and performance specifications, while Boeing prepared the helicopter's specifications and drawings. This evidence was sufficient for the

jury to find in special interrogatory 4 that Boeing had final control over the design of the aircraft. This case is, therefore, unlike *Koutsoubos* where it was shown that the Navy established both the general and detailed specifications. 553 F.Supp. at 343-344. Accordingly, we conclude that the government did not establish the specifications for the CH-47 helicopter. Therefore, we need not discuss the last two elements of the *Agent Orange* test.

The defendant contends that even if the government did not establish the specifications, the defense may nevertheless be available if the government approved of them. Indeed, the Ninth Circuit so held in *McKay v. Rockwell International Corp.*, 704 F.2d 444 (9th Cir. 1983). We decline to follow the Ninth Circuit.

McKay listed the following as elements of the government contractor defense:

> (1) the United States is immune from liability under *Feres and Stencel,* (2) the supplier proves that the United States established, or approved, reasonably precise specifications for the allegedly defective military equipment, (3) the equipment conformed to those specifications, and (4) the supplier warned the United States about patent errors in the government's specifications or about dangers involved in the use of the equipment that were known to the supplier but not to the United States.

704 F.2d at 451. The court advanced four reasons as a basis for this formulation of the defense. While these rationales may support the application of the defense where the government sets the specifications, based upon the facts in the case *sub judice,* we do not believe that they support its application where the government merely approves the specifications.

First, the *McKay* court stated that holding a "supplier liable in government contractor cases without regard to the extent of government involvement in fixing the product's design and specification would subvert the *Feres-Stencel* rule since military suppliers, despite the government's immunity, would pass the costs of accidents off to the United States . . . ." *Id.* at 449. The *Feres-Stencel* doctrine bars a member of the armed forces who sustains an injury while on active duty from bringing an action against the United States under the Federal Tort Claims Act, 28 U.S.C. § 2671 *et seq.*, and also precludes the United States from indemnifying a third party for damages paid by it to an armed forces member who is injured during military service. *See, McKay,* 704 F.2d at 448. Accordingly, with respect to the civilian plaintiffs in the case *sub judice,* this action would not be barred by the *Feres-Stencel* doctrine because they are not members of the armed forces and because the helicopter crash did not occur during a military mission. Moreover, this court is not holding the supplier liable "without regard to the extent of government involvement" in fixing the product's design. We are holding that where a contractor establishes a product's detailed specifications and the government merely approves them, the government contractor defense is not available to the contractor.

Second, *McKay* asserts that where the United States approved the design specifications, the judiciary would be thrust into the making of military decisions if suppliers were held liable for design defects. *Id.* at 449. This reasoning, however, ignores the reality that not all decisions regarding the design of military equipment involve military judgments. In the case *sub judice,* the helicopter's crash was caused by the failure of the transmission synchronizing the helicopter's tandem rotor blades. Whether the helicopter is used for civilian or military

purposes, the tandem rotor design requires a transmission that can synchronize the rotor blades so as to avoid their collision with one another. There is no imposition of the judiciary upon military decision making by requiring the helicopter to have a synchronization system free from defects so as to enable it to fly safely. Thus, where the design decisions involved do not require any special military expertise, there is no justification for insulating a contractor from liability where the government merely approves of the decision.

Third, the *McKay* court stated that:

> [I]t should be noted that in setting specifications for military equipment, the United States is required by the exigencies of our defense effort to push technology towards its limits and thereby to incur risks beyond those that would be acceptable for ordinary consumer goods. A supplier is frequently unable to negotiate with the United States to eliminate those risks.

Id. at 449-450. However, as previously mentioned, whether the helicopter is used for a civilian or military purpose, it must be designed so that it can fly safely. This is not a case of the Army pushing the technology to its limits. The tandem rotor design has been used by Boeing for over twenty years. Moreover, the case *sub judice* is not one where the supplier was unable to negotiate with the Army to eliminate the risks since it was the supplier who established the specifications in the first instance.

Finally, *McKay* states that "a government contractor defense provides incentives for suppliers of military equipment to work closely with and to consult military authorities in the development and testing of equipment." *Id.* at 450. While this may be true when the government sets the specifications, it is not true when the specifica-

tions are established by the contractor. When the government sets the specifications, a contractor needs to know that it can consult with the government in attempting to follow the government's specifications without incurring liability on itself. However, when the contractor establishes the specifications, the contractor has no incentive to consult with the government if government approval of the specifications is sufficient to insulate a contractor from liability. Accordingly, we hold, in the case *sub judice,* that because Boeing established the detailed specifications and drawings of the CH-47's synchronization system, it is precluded from being insulated from liability under the government contractor defense.

Boeing's second ground in support of its motion for a judgment notwithstanding the verdict is that it cannot be held liable because helicopter 22292 was not unreasonably dangerous for its military purpose at the time it was sold. Pennsylvania has adopted the Restatement (Second) of Torts § 402A[3] and has applied it in a way so as to require the court to determine, as a matter of law, whether the

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[3]Section 402A states:

> (1) One who sells any product in a defective condition unreasonably dangerous to the user or consumer or to his property is subject to liability for physical harm thereby caused to the ultimate user or consumer, or to his property, if (a) the seller is engaged in the business of selling such a product, and (b) it is expected to and does reach the user or consumer without substantial change in the condition in which it is sold.
>
> (2) The rule stated in Subsection (1) applies although (a) the seller has exercised all possible care in the preparation and sale of his product, and (b) the user or consumer has not bought the product from or entered into any contractual relation with the seller.
>
> Restatement (Second) of Torts § 402A (1965).

product in question is unreasonably dangerous. *See Azzarello v. Black Bros. Co., Inc.,* 480 Pa. 547, 554-560, 391 A.2d 1020, 1025-1027 (1978). Although the phrase "unreasonably dangerous" as used in the Restatement has no independent significance, it does "represent a label to be used where it is determined that the risk of loss should be placed upon the supplier." 480 Pa. at 556, 391 A.2d at 1025. The trial court must determine whether the risk of loss should be placed upon a supplier with an eye toward the social policy underlying Pennsylvania products liability law, 480 Pa. at 558, 391 A.2d at 1026, and must exercise its own judgment in determining "whether the facts alleged by plaintiff, if true, would justify the imposition of strict liability." *Hammond v. International Harvester Co.,* 691 F.2d 646, 650 (3d Cir. 1982).

The defendant contends that this court has no basis for determining that the design of helicopter 22292 was unreasonably dangerous for the military's intended use. The defects alleged by the plaintiffs regarding the helicopter's synchronization system included, but were not limited to, the following:

> 1. Failure to have timely warning devices in the forward transmission to alert the pilot of ongoing failures;
>
> 2. Lack of adequate clearance between the synchronization shaft and the air frame fuselage so as to prevent contact between the shaft and the air frame structure;
>
> 3. Selection of improper materials for use in the manufacture of the synchronization shaft; and
>
> 4. Inadequate and defective oil filters in the forward transmission.

These allegations constituted a sufficient basis for submitting to the jury the issue of whether the helicopter was designed defectively. Any one of the defects alleged would support a finding that the helicopter was unreasonably dangerous for its intended use. The fact that the aircraft was intended to be used for a military purpose does not affect our consideration. If the helicopter could not fly safely, it was not fit for any purpose.

The defendant contends, however, in its third ground supporting the motion, that a court is not the proper body to determine whether a military product's design is unreasonably dangerous. In light of its assessment of our defense requirements, the military, according to the defendant, is the only body that can make such a determination. Accordingly, the defendant asserts that this court's disposition of the matter is barred by the political question doctrine. The defendant cites *Gilligan v. Morgan,* 413 U.S. 1 (1972), a case growing out of the Kent State disturbances, where it was stated that:

> Trained professionals, subject to the day-to-day control of the responsible civilian authorities, necessarily must make comparative judgments on the merits as to evolving methods of training, equipping, and controlling military forces with respect to their duties under the Constitution. It would be inappropriate for a district judge to undertake this responsibility in the unlikely event that he possessed requisite technical competence to do so.

413 U.S. at 8.

While a court is not an appropriate body for determining our nation's defense requirements, that is not what this court is required to do in the case *sub judice.* The Army made a determination as to the capabilities it thought the CH-47 should have. This determination was

embodied in the performance specifications it submitted to Boeing. The Army contracted with Boeing not only to manufacture the aircraft, but to develop the detailed specifications and drawings needed to implement the performance specifications. Thus, the court is not substituting its judgment for the Army's by determining that the helicopter was unreasonably dangerous. Rather, we find that, given the Army's assessment of the CH-47's performance requirements, the helicopter was not fit for its intended use. The determination that a product is unfit for its intended use is one that courts are required to make in the most ordinary products liability case. Accordingly, we hold that the political question doctrine does not bar this determination in the case *sub judice.*

The defendant's fourth contention in support of its motion for a judgment n.o.v. is that absent evidence that the Army would have approved the design changes that the plaintiffs assert were necessary to make the aircraft safe, there was no factual issue on causation to submit to the jury. Under Pennsylvania law, a party's negligence, standing alone, does not render it liable for injuries sustained by another party. Rather, the wrongful conduct must be "a substantial factor in bringing about [a] plaintiff's injury even though it need not be the only factor." *Majors v. Brodhead Hotel,* 416 Pa. 265, 271, 205 A.2d 873, 877 (1965) (citations omitted). Moreover, a "defendant's negligent conduct is not a substantial factor in bringing about the plaintiff's injury if it would have been sustained even if the actor had not been negligent." 416 Pa. at 271-272, 205 A.2d at 877 (citations omitted). Thus, the defendant argues that its negligence was not established as a substantial factor in bringing about the helicopter's crash in the absence of evidence that the Army would have approved of the design changes needed to make the aircraft safe.

We do not agree that the record is devoid of such evidence. Between 1966 and 1968, there were three accidents involving the CH-47 resulting from the failure of the helicopters' forward transmissions. 9 T.R. at 131. Sol Binder, Chief of Dynamics System Design for Boeing-Vertol, testified that as a result of the accidents Boeing proposed six engineering changes ("ECPs") to the Army. 9 T.R. at 152. He also testified that five of these proposals were adopted by the Army. *Id.* Construing the evidence in the light most favorable to the nonmoving party on a motion for a judgment n.o.v., we conclude that the jury could have reasonably inferred that the Army would have approved of the design changes that the plaintiffs contend were needed to make the helicopter safe had such changes been proposed by Boeing.[5]

The defendant's final argument in support of its motion for a judgment n.o.v. is that the evidence is insufficient to support a finding of negligence because there was no testimony as to the reasonable standard of care with which a military helicopter drive system should be designed. The essence of a complaint grounded in negligence is, of course, that the defendant's conduct fell "below the standard established by law for the protection of others against unreasonable risk of harm." Restatement (Second) of Torts §282. Analogizing to malpractice cases which require expert testimony to establish the standard of care within a given profession, the defendant asserts that expert testimony was required to establish the standard of care that an engineer would have been required to exercise in designing the CH-47's drive sys-

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[5]With regard to the plaintiffs' strict liability claim, we also conclude that this testimony is sufficient to have allowed the jury to draw the inference that a design defect caused the helicopter's crash.

tem. The defendant further asserts that there was no such testimony in the case *sub judice.*

We are unaware of any Pennsylvania cases which have applied the expert testimony requirement to the engineering profession. Even if we were to impose such a requirement, the plaintiffs clearly complied with it in the case *sub judice.* The plaintiffs presented the expert testimony of Angelo Coronato, a Registered Professional Engineer with a Masters Degree in Engineering Mechanics from Yale University. The defendant did not challenge Coronato's qualifications as an expert witness. 6 T.R. at 44. Coronato testified as to specific defects in the design of the CH-47's forward transmission and the ways in which the transmission could have been designed safely. *See, e.g.* 6 T.R. at 70-76, 81-82, 90, 95-96. Accordingly, the plaintiffs established a standard of care upon which the jury could base a finding of negligence. Having reviewed the evidence and the inferences arising therefrom in the light most favorable to the plaintiffs, this court concludes that the jury's verdict should stand.

MOTION FOR A NEW TRIAL

The defendant has raised six grounds in support of its motion for a new trial. "Decisions to grant a new trial rest in the sound discretion of the court . . ." *Lanza v. Poretti,* 537 F.Supp. 777, 782 (E.D. Pa. 1982) (citations omitted). The court may not substitute its own judgment for that of the jury. *Marder v. Conwed Corp.,* 75 F.R.D. 48, 54 (E.D. Pa. 1977). "[T]he jury's verdict may be set aside only if manifest injustice will result if it were allowed to stand." 537 F.2d at 782.

First, the defendant contends that the jury should have been discharged following an *ex parte* communication between the court and a juror during jury's deliberations.

On the eleventh day of the trial, responding to a request from the jury that the charge be reread, the court reinstructed the jury. 11 T.R. at 7-19. As the jurors returned to the jury room to deliberate, the court clerk informed juror #5 that, pursuant to her earlier request, the court would speak to her. While counsel were at sidebar, the court announced that he would speak to the juror. 11 T.R. at 25. No objections were made by counsel. The court went to the other end of the bench and briefly spoke to the juror. Upon returning to counsel at sidebar, the court immediately informed counsel of the substance of the conversation with the juror. The court explained that the juror stated that she was feeling some pressure and that she was told to "go back and work on the problem." 11 T.R. at 25.

The following exchange then took place between the court and counsel for the defendant:

> MR. GRIFFIN: I don't think one juror should talk to the Court.
>
> THE COURT: I did not ask her to come to me. She asked the court room deputy to speak to me.
>
> MR. GRIFFIN: I don't think you can give individual advice.
>
> THE COURT: I don't think it's advice. I want to keep the jury together. They have been here two weeks. It's not unusual for people on jury duty to feel pressure.

11 T.R. at 25-26. Counsel for the defendant neither moved for the jury's discharge nor requested to voir dire juror #5. After a discussion on some unrelated matters, counsel for the defendant renewed his exception to the court's discussion with the juror, but again, failed to request that any curative measures be taken. 11 T.R. at 28.

Not all conversations that a court may have with a juror constitute an error. *United States v. United States Gypsum Co.*, 438 U.S. 422 (1978) is instructive in this matter. In that case, after deliberating for six days, the jury informed the court that it was unable to reach a verdict. On the seventh day, the trial judge suggested that he meet alone with the jury foreman. Counsel acquiesced to this suggestion. The transcript of the meeting between the trial judge and the foreman revealed that there was a strong likelihood that the foreman thought that the judge wanted a verdict one way or the other. The transcript of this meeting was unavailable to the parties and they did not receive a full report of the meeting from the trial judge. In concluding that the trial judge committed an error, the Supreme Court stated that:

> . . . it is not simply the action of the judge in having the private meeting with the jury foreman, standing alone — undesirable as that procedure is — which constitutes the error; rather it is the fact that the ex parte discussion was inadvertently allowed to drift into what amounted to a supplemental instruction to the foreman relating to the jury's obligation to return a verdict, coupled with the fact that counsel were denied any chance to correct whatever mistaken impression the foreman might have taken from this conversation, that we find most troubling.

438 U.S. at 462.

In the case *sub judice,* the court did not issue any supplemental instructions to juror #5. The juror informed the court that she was feeling some pressure and the court merely suggested to her that she should return to the jury and try to work out the problem. Moreover, counsel had every opportunity to seek curative measures, yet none were requested. Accordingly, we hold that the

court's communication with the juror did not constitute a trial error.

The defendant's second contention in support of its motion for a new trial is that the court should have discharged the jury after the plaintiff's counsel referred to a "hold harmless" agreement between Boeing and the United States Government. On the eighth day of trial, the defendant called Robert G. Fogg, a Boeing contract manager, to testify. On cross-examination, counsel for the plaintiff called Fogg's attention to page 56 of the contract between Boeing and the Army which contained a list of Armed Services Procurement References ("ASPERS"). 8 T.R. at 104. The following exchange then took place among counsel for the plaintiffs, Fogg, and counsel for the defendant:

> Q Yes. Now one of those ASPERS is Item 38 which is listed on page 56, and that is 7-104.45A; is that right?
>
> A Item 38?
>
> Q Yes, sir.
>
> A Yes.
>
> Q That's something that you are familiar with, are you not?
>
> A You mean the limitation of liability for defects?
>
> Q Yes.
>
> A I have read the clause.
>
> Q Yes, and under that clause isn't it correct, sir, that even if the aircraft were to have an accident as a result of a design or manufacturing defect that the

Government under this Armed Services Procurement Regulation agrees to hold Boeing harmless?

A I have not read the clause in a very few years. It is a standard ASPER clause that's usually accepted.

Q All right. Let me show you this exhibit that I have marked as 157, and ask you if you recognize that as the ASPER clause that would have been applicable in that contract?

MR. GRIFFIN: If your Honor please, I object to this and move that it be stricken. I don't see what conceivable relevance it has in this law suit.

MR. SILVERMAN: It is part of the contract.

THE COURT: Mr. Griffin.

MR. GRIFFIN: Your Honor, I have made my objection. The mere fact that it is part of the contract does not make everything in it relevant to the law suit.

I think people should be told to ignore it.

THE COURT: I will sustain the objection.

8 T.R. at 105-106.

A reference by counsel to a defendant's insurance coverage may constitute misconduct which justifies a new trial. *Cuccarese v. Soloman,* 405 F.2d 866 (2nd Cir. 1969). The reasons for prohibiting references to insurance coverage before a jury are:

> that the jury may be tempted to assess liability where none exists or to arrive at an excessive verdict based on sympathy for an injured plaintiff with the thought that it is not the defendant personally, but an insur-

> ance company, which will ultimately be called upon to bear the burden of payment of the verdict.

Nicholson v. Garris, 418 Pa. 146, 151, 210 A.2d 164, 166 (1965). However, where a reference to insurance merely constitutes an isolated incident, as opposed to a continuing pattern of conduct, the risk of prejudicial error may not be sufficient to justify a new trial. *See City of Cleveland v. Peter Kiewit Sons' Co.,* 624 F.2d 749 (6th Cir. 1980).

Based upon the record cited above, we conclude that the reference to the hold harmless provision of the ASPER clause in the case *sub judice* does not constitute a basis for granting a new trial. First, while virtually all jurors will understand the significance of insurance coverage, it is not clear that many of them will comprehend the meaning of a hold harmless provision. This term was not explained at any length to the jury. Second, the hold harmless provision was mentioned a single time in front of the jury during the course of an eleven day trial. It was, therefore, an isolated incident and not part of any pattern of misconduct. Finally, even if the jurors believed that the government would hold Boeing harmless for injuries resulting from design or manufacturing defects, the risk of prejudice is not as great as when a jury learns that a private insurance company is the defendant's insurer. This is because the jurors in the case *sub judice* could have believed that they, as taxpayers, would ultimately pay for any assessment of liability against Boeing. Thus, reference to the hold harmless provision was not prejudicial.

The defendant next asserts that the court erred in admitting testimony concerning burrs (metal edges) in the lubrication jets of the forward transmissions in CH-47 helicopters other than helicopter 22292. Boeing contends

that the plaintiffs admitted that burrs were not a part of their case. The record, however, does not reflect an admission by plaintiffs that burrs were not a part of their case. Therefore, we need not consider this contention.

As its fourth ground in support of the motion for a new trial, the defendant lists several objections to the charge and the special interrogatories submitted to the jury. First, Boeing asserts that the court erred in declining to hear its objections to the special interrogatories prior to the commencement of closing arguments in front of the jury. On the tenth day of the trial, before the closing arguments were begun, the court submitted to counsel the interrogatories that the jury would be asked to consider. 10 T.R. at 10. Counsel for the defendant then asked, "Does your Honor want to hear anything about these [the interrogtories] at the moment?" *Id.* The court responded, "No, you have an automatic exception to it, and I'll be glad to hear anything that you want to say." *Id.*

Rule 49(a) of the Federal Rules of Civil Procedure provides, in part:

> The court may require a jury to return only a special verdict in the form of a special written finding upon each issue of fact. In that event the court may submit to the jury written questions susceptible of categorical or other brief answer or may submit written forms of the several special findings which might properly be made under the pleadings and evidence; or it may use such other method of submitting the issues and requiring the written findings thereon as it deems most appropriate. The court shall give to the jury such explanation and instruction concerning the matter thus submitted as may be necessary to enable the jury to make its findings upon each issue.

Since this rule requires a court to instruct a jury when special interrogatories are submitted, the rule should be read in conjunction with Fed.R.Civ.P. 51 which governs instructions. In addition to permitting parties to file requests for jury instructions with the court, Fed.R.Civ.P. 51 provides:

> The court shall inform counsel of its proposed action upon the requests prior to their arguments to the jury, but the court shall instruct the jury after the arguments are completed.

Although Rule 49(a) is silent as to when a court must show counsel the special interrogatories, this rule must be read together with Rule 51 to require that the interrogatories be submitted to counsel prior to the closing arguments. "Otherwise counsel will have been deprived of the opportunity to request instructions on what may be very significant issues in the jury's deliberation." *Smith v. Danyo,* 585 F.2d 83 (3d Cir. 1978).

The record clearly shows that the court complied with the applicable rules in the case *sub judice.* As required by the rules, the interrogatories were shown to counsel prior to the beginning of the closing arguments. The purpose of the rules' requirement is to permit counsel to request instructions on the law applicable to the interrogatories. Since the parties discussed the jury instructions prior to the closing arguments, 10 T.R. at 18-19, the fact that objections to the interrogatories themselves were not heard before the closing arguments does not constitute an error.

Moreover, assuming, *arguendo,* that an error was made, it must be characterized as harmless. After the closing arguments were completed, but before the jury was instructed, the parties were given a full opportunity to raise objections to the special interrogatories. 10 T.R. at 120-

123. None of the interrogatories submitted by the court prior to the closing arguments were changed as a result of the defendant's objections. Accordingly, the fact that the court did not hear objections to the interrogatories when they were submitted did not affect the substantial rights of the parties so as to require a new trial. *See* Fed.R.Civ.P. 61.

Second, regarding the jury charge and interrogatory 4, the defendant asserts that they incorporated an incorrect statement of the government contractor defense. Interrogatory 4 required the jury to consider the following:

> 4. Did the defendant, Boeing Vertol have final control of the design of the aircraft?

As previously stated, the first element of the government contractor defense requires a determination as to whether the government established the specifications for the CH-47 helicopter. Since the identity of the party having final control over the aircraft's design is crucially relevant to this element of the defense, the interrogatory incorporated the correct legal standard. For the same reason, portions of the jury charge which included the concept of "final control" were also not in error.

Third, defendant claims that interrogatory 5 should not have been submitted to the jury. Interrogatory 5 asked:

> 5. Was the aircraft when delivered by the defendant to the Army, defective?

On the ninth day of the trial, Sol Binder, testifying for the defendant, stated that, in his opinion, if the Army had adopted an engineering change proposal submitted by Boeing known as "ECP 422", then the accident at Mannheim would not have occurred. 9 T.R. at 132-134. The defendant argues that interrogatory 5 fails to account for this evidence and gives the jury no guidance for consider-

ing it. Boeing contends that, given these inadequacies, the jury's affirmative answer to interrogatory 5 was a foregone conclusion.

Evidence regarding ECP 422 could have, in fact, been considered by the jury in answering interrogatories 2 and 6 which related to the issue of proximate cause. If the jury believed that the Army's adoption of ECP 422 could have prevented the accident, then the jury could have found that Boeing's negligence or the helicopter's defect was not a substantial factor in causing the accident and was, therefore, not its proximate cause. Thus, if the jury's affirmative answer to interrogatory 5 was a foregone conclusion, it was not because the jury lacked a framework for considering ECP 422.

The defendant's fifth contention in support of the motion for a new trial is that the court erred in submitting to the jury the issue of whether the clearance between the synchronization shaft and the aircraft's fuselage at a point known as Station 120 was adequate. In its charge to the jury, the court stated that, "the plaintiffs contend that the defendant defectively designed the Chinook CH-47C due to insufficient clearance between the synchronization shaft and main frame area at Point 120." 10 T.R. at 130. The defendant asserts that the plaintiffs presented no evidence indicating that the clearance was defective or negligently designed.

The record, however, does not support this assertion. The plaintiffs' expert witness, Angelo Coronato, was asked the following with regard to three prior accidents involving the CH-47 helicopter:

> Q Now, have you formed an opinion, sir, as to what reasonable steps from a design standpoint were necessary to take as a result of those prior accidents

to do something about this problem existing at Station 120?

A Well, as a result of those earlier accidents, it was a bit obvious that if you do get a failure and in the input pinion pack assembly, as is here, that the snyc-shaft will become unstable and contact Station 120. And there are a number of solutions that should have been considered and could have been considered at that point in time.

10 T.R. at 95. One of the solutions Coronato discussed included the following:

A Well, one, they could have looked into actually making this section of the shaft of steel rather than aluminum, so that it would buy the pilot more time if it is rubbing against the Station 120.

10 T.R. at 95-96. The obvious import of this testimony was that the clearance between the synchronization shaft and the fuselage was inadequate. Moreover, the plaintiffs' expert suggested design changes which could have alleviated the clearance problem. Accordingly, the court did not err in submitting the issue of the clearance problem to the jury.

As a final ground in support of the motion, the defendant raises objections to two of the court's evidentiary rulings. First, the defendant contends that the court erred in admitting into evidence a report prepared by the Corpus Christi Army Depot's Analytical Investigations Branch ("AIB"). The AIB report was an exhibit which was attached to the United States Army Col'ateral Accident Investigation Report (the "JAG Report"). Included in the AIB report was a recommendation that the clearance between the synchronization shaft and fuselage be increased. The defendant sought to introduce the factual

findings of the JAG report into evidence, but objected to the admission of the accompanying exhibits (including the AIB report). The court, however, granted the plaintiffs' motion to admit the entire JAG report, including the exhibits. 9 T.R. at 68-69.

The Federal Rules of Evidence provide for a public records exception to the hearsay rule. Fed.R.Evid. 803(8). Relevant to the JAG Report is subsection (C) of this rule which provides, in civil actions, for the admission of:

> factual findings resulting from an investigation made pursuant to authority granted by law, unless the sources of information or other circumstances indicate lack of trustworthiness.

Although what constitutes a "factual finding" for the purposes of subsection (C) has been the subject of some controversy, it is now settled that evaluative reports (i.e. those containing normative conclusions in addition to a recitation of facts) are admissible. *Zenith Radio Corp. v. Matsushita Electric Industrial Co., Ltd.,* 505 F.Supp. 1125 (E.D. Pa. 1980) (hereinafter "the *Japanese Antitrust Litigation*"), *rev'd on other grounds,* No. 81-2331 (3d Cir. Dec. 5, 1983); *Melville v. American Home Assurance Co.,* 443 F.Supp. 1064 (E.D. Pa. 1977). Accordingly, there is no question that the JAG report itself is admissible under Fed.R.Evid. 803(8)(C). The admissibility of the JAG report's accompanying exhibits, however, presents a more difficult problem.

In the *Japanese Antitrust Litigation,* the district court was presented with a 17,000 page pre-trial statement from the plaintiffs which was based on approximately 250,000 documents. 505 F.Supp. at 1125. Faced with the grueling task of determining the admissibility of these documents, the court needed a way of weeding out documents that

were only tangentially related to the case. In considering the scope of Fed.R.Evid. 803(8)(3), the court concluded:

> that so long as the trustworthiness criteria are met . . . , where a staff report contains factual averments that are not mere recitations of evidence, but rather reflect conclusions made by the staff on the basis of evidence before it, those averments may be admitted as 803(8)(C) "findings." Where, however, the staff report is submitted to a commission or other public agency charged with making formal findings, only those factual statements from the staff reports that are approved and adopted by the agency will qualify as 803(8)(C) "findings." (citation omitted)

505 F.Supp. at 1145. This definition of "findings" was based upon the court's preception that the drafters of the Rules did not intend "to piggyback the whole administrative proceeding on top of the tribunal." *Id.* To do so, the court explained:

> would permit vast amounts of time to be spent addressing the admissibility of exhibits which are but excess baggage with no direct bearing on the issues at trial. Such a result would, indeed, offend the basic constructional rule, F.R.E. 102, one of whose precepts is the "elimination of unjustifiable expense and delay," as well as the principles underlying Rule 403.

Id. In sum, then, the court excluded exhibits attached to agency reports to prevent a waste of judicial resources and to avoid the risk of prejudice and confusion with which Fed.R.Evid. 403 is concerned.[6]

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[6]Rule 403 states:

> Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair

While the potential for the waste of judicial resources and the confusion of the fact finder was very great in an antitrust case involving 250,000 documents, the potential for these dangers was not nearly as great in the case *sub judice*. First, no judicial resources were compromised by the admission of the exhibits accompanying the JAG report. The district court, in the *Japanese Antitrust Litigation*, was faced with the prospect of considering exhibits to several thousand documents. This court, on the other hand, was required to consider only 29 exhibits attached to a single document. Second, the exhibits admitted into evidence, did, in fact, have a direct bearing on the issues at trial. The AIB report supports the plaintiffs' contention about the adequacy of the clearance between the synchronization shaft and the fuselage at Station 120. Third, the risk of confusing the jury was greatly minimized because neither the JAG report nor the attached exhibits were allowed to accompany the jury into the deliberation room. Thus, the jurors were not inundated with a mass of papers and they heard counsel make only limited references to the documents at trial. Given the relevancy of the exhibits and the lack of undue prejudice their admission would cause the defendants, the documents were admitted in the interest of developing a full record.

The case *sub judice* is factually similar to *Complaint of American Export Lines, Inc.*, 73 F.R.D. 454 (S.D.N.Y. 1977). In *American Export*, the United States Coast Guard convened a Marine Board of Investigation to ascertain the cause of a collision between two ships in New York harbor. The court held that the exhibits to the

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prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence.

Marine Board of Investigation report were admissible under Rule 803(8). Accordingly, we hold that the exhibits to the JAG report, like those of the Marine Board report, are admissible, and that the defendant was not prejudiced by their admission. We further hold that there is no basis for asserting a lack of trustworthiness in the sources of the exhibits. Rule 803(8) "assumes admissibility in the first instance," Advisory Committee Notes to Rule 803(8), and the defendant presented no grounds indicating that the sources of the exhibits were untrustworthy.

The defendant's second objection to an evidentiary ruling of this court is based on what it characterizes as the court's refusal to permit Boeing to argue from evidence concerning the Army's rejection of a Boeing recommendation to increase the clearance at Station 120. After the accident at Mannheim, Boeing proposed an engineering change known as ECP 747 which called for an increase in the clearance at Station 120. This ECP was rejected by the Army.

The court, however, did not preclude the defendant from arguing this evidence to the jury. The defendant was merely precluded from asserting that this evidence was probative of what the Army would have done prior to the accident. The defendant was not precluded from using this evidence for other purposes.

Based upon the foregoing, the defendant's motion for a new trial is denied.

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF
PENNSYLVANIA

IN RE: AIR CRASH DISASTER AT MANNHEIM,
GERMANY ON
SEPTEMBER 11, 1982

MDL #555

URSULA J. SCHOENBORN, et al

vs.

THE BOEING COMPANY

C.A. No. 82-4339

May 14, 1984

ORDER

The motion of the defendant, the Boeing Company, for a judgment notwithstanding the verdict or, in the alternative, a new trial, is DENIED.

Judgment is entered in favor of the plaintiffs and against the defendant.

IT IS SO ORDERED.

/s/ Charles R. Weiner
CHARLES R. WEINER

APPENDIX C

THE UNITED STATES COURT OF APPEALS
FOR THE THIRD CIRCUIT

NO. 84-1446

IN RE: AIR CRASH DISASTER AT MANNHEIM. GERMANY ON 9/11/82

(D. C. MDL #555)

URSULA J. SCHOENBORN, as Executrix of the Estate of LEON EDWARD SCHOENBORN, Deceased

VS.

THE BOEING COMPANY

(D. C. Civil No. 82433)

THE BOEING COMPANY,
Appellant

On Appeal from the United States District Court for the Eastern District of Pennsylvania

Present: HUNTER and GARTH, Circuit Judges, and GERRY, District Judge*

JUDGMENT

This cause came on to be heard on the record from the United States District Court for the Eastern District of Pennsylvania and was argued by counsel March 21, 1985.

On consideration whereof, it is now here ordered and adjudged by this Court that the judgment of the said District Court, dated May 14, 1984, and entered May 15,

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*Honorable John F. Gerry, United States District Judge for the District of New Jersey, sitting by designation.

1984 which was certified to this Court pursuant to 28 U.S.C. § 1292(b) by order entered June 5, 1984, be, and the same is hereby reversed and the cause remanded to the said district court with direction to enter judgment in favor of Boeing-Vertol. Costs taxed against appellees. All of the above in accordance with the opinion of this Court.

ATTEST:

SALLY MRVOS
Clerk

June 28, 1985

Costs taxed in favor of appellant as follows:

Docketing Fee	$ 65.00
Appendix	2,037.00
Brief	264.60
Reply Brief	120.60
Total	$2,487.20

Certified as a true copy and issued in lieu of a formal mandate on August 1, 1985.

Test:
M. ELIZABETH FERGUSON
Chief Deputy Clerk, U.S. Court of Appeals for the Third Circuit

APPENDIX D

UNITED STATES COURT OF APPEALS
FOR THE THIRD CIRCUIT

No. 84-1446

IN RE: AIR CRASH DISASTER AT MANNHEIM
GERMANY ON 9/11/82

(D. C. MDL #555)

URSULA J. SCHOENBORN, as Executrix
of the Estate of LEON EDWARD SCHOENBORN,
Deceased

vs.

THE BOEING COMPANY

(D. C. Civil No. 82-4339)

THE BOEING COMPANY,

Appellant

On Appeal from the United States District Court
for the Eastern District of Pennsylvania
D.C. No. MDL #555

Argued March 21, 1985

Before: HUNTER and GARTH, Circuit Judges,
and GERRY, District Judge*

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*Honorable John F. Gerry, United States District Judge for the District of New Jersey, sitting by designation.

SUR PETITION FOR REHEARING

Present: ALDISERT, Chief Judge, SEITZ, ADAMS, GIBBONS, HUNTER, WEIS, GARTH, HIGGINBOTHAM, SLOVITER, BECKER, STAPLETON and MANSMANN, Circuit Judges, and GERRY, District Judge.*

The petition for rehearing filed by appellants, Ursula J. Schoenborn, as Executrix of the Estate of Leon Edward Schoenborn, deceased, in the above-entitled case having been submitted to the judges who participated in the decision of this court, and to all the other available circuit judges of the circuit in regular active service, and no judge who concurred in the decision having asked for rehearing, and a majority of the circuit judges of the circuit in regular active service not having voted for rehearing by the court in banc, the petition for rehearing is denied.

Judge Gibbons would grant the petition for rehearing.

DATED: July 24, 1985

By the Court

LEONARD I. GARTH
Circuit Judge

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*Honorable John F. Gerry, United States District Judge for the District of New Jersey, sitting by designation.

APPENDIX E

SCHOENBORN v. BOEING
C.A. No. 82-4339

1. Was the defendant Boeing Vertol negligent?

YES ✓ NO ____

If the answer is "NO", go to Number 4.

If the answer is "YES", answer Number 2.

2. Was the negligence of Boeing Vertol a proximate cause of the accident?

YES ✓ NO ____

3. Was the Government's maintenance a superseding cause of the accident?

YES ____ NO ✓

4. Did the defendant Boeing Vertol have final control of the design of the aircraft?

YES ✓ NO ____

If the answer to Number 4 is "YES", go to Number 5. If the answer is "NO", go no further.

5. Was the aircraft when delivered by the defendant to the Army, defective?

YES ✓ NO ____

If your answer is "YES", go to Number 6. If "NO" go no further.

6. Was the defect a proximate cause of the accident?

YES ✓ NO ____

APPENDIX F
(Plaintiff's Exhibit 88)

DRAFT
INTERIM SUMMARY REPORT
CE-47A S/N 63-7913 (B-67)
MAJOR ACCIDENT — AN KHE, RVN

28 April, 1966

I.
INTRODUCTION

a. Analysis of witness statements and wreckage dispersion resulted in the development of the following accident sequence:
On 29 January 1966 the subject aircraft was 10 miles east of An Khe at 1500 feet above the terrain with a crew of six and a sling load of two 500 gallon fuel cells. The sling load was released and the aircraft descended approximately 500 feet in what appeared to be an autorotation. The nose pitched down and while almost in a vertical position, the aft rotor and aft pylon section, including the aft transmission, separated from the airframe. Also, the forward rotor and the upper portion of the forward transmission separated from the airframe. The fuselage came to rest in an inverted position in a rice paddy. There was no fire on impact. There were no survivors.

b. Appendix I, scatter diagram, depicts the location of major aircraft components at the accident site.

II.
AIRCRAFT BACKGROUND

The aircraft was delivered to the U.S. Army in August 1964 and had accumulated 312 flight hours up to the accident. Major components installed in the aircraft, pertinent to the accident, were as follows:

a. Forward transmission P/N 114D1001; S/N A-7-128; 232 Hours Total Time

b. NO. 1 Sync. Shaft P/N 114D3048-7

c. Forward Transmission Lube Pump P/N 114D8146-2

d. Magnetic Chip Detector TEDCO. P/N B720

III.
AN KHE INVESTIGATION

a. The Boeing-Vertol personnel participating in the accident investigation arrived on site 8 February 1966. The wreckage had been transported to the main base for reconstruction. Upon examination and reconstruction of the wreckage, it was considered significant that the forward transmission pinion gear shaft was bent with evidence of heat in the bore at the thrust bearing location. The No. 1 synchronizing shaft had failed. Blade reconstruction revealed that the aft rotor blades had struck the underside of the forward blades indicating a ~~reduction of forward rotor RPM and desynchronization.~~
desynch and reduction of fwd rotor rpm.

b. Blades

All fractured blade surfaces were examined and determined to be ultimate due to blade to blade contact in flight or from impact with the ground. See Appendix II for a detailed description of the blade strike sequence.

c. Rotor Controls

The failures in the rotor controls, swashplates lag dampers and rotor head components were ultimate in nature due to impact.

d. Transmissions and Drive Shafting

The aft transmission, rotor shaft and aft upper thrust bearing show impact damage only. The Thomas Coupling adapter at the aft transmission failed thru the three legs due to fuselage separation.

The engine transmissions were damaged due to impact. The combining transmission was free to rotate after removal of the oil pump which was jammed with mud. The forward transmission had separated from the fuselage, the spiral bevel gear shaft was bent, the spiral bevel gears were out of mesh and the lower case was broken at the planetaries.

The NO. 1 synchronizing shaft was broken into three parts and Thomas Coupling plates and adapter show evidence of rotational contact with the fuselage. It is significant to note that all drive system components were capable of transmitting power up to the time of aircraft break up and ground impact with the exception of the forward transmission and the NO. 1 synchronizing shaft.

e. All Other Systems

Damage sustained by components of all other systems was sustained by aircraft break up and/or ground impact.

f. Maintenance

Examination of the aircraft maintenance history revealed nothing abnormal with the exception of the forward transmission oil analysis records. These records show a change in the rate of rise of magnesium and iron content in the oil. See Appendix III for plot of content versus hours of operation.

IV.
VERTOL DIVISION INVESTIGATION

a. The forward transmission S/N A-7-128 and the NO. 1 synchronizing shaft P/N 114D3048-7 were returned to the Vertol Division of the Boeing Company for a detailed examination.

b. NO. 1 synchronizing shaft

1. This shaft had failed in two places and was in three pieces. See photographs NO. 1 and NO. 2 of Appendix IV, P.B.N. Report. Laboratory analysis of the shaft fractures verified the failures as ultimate in nature, occasioned by excessive torque and/or bending loads.

*DICK: When the pinion bends to 2°, the synch shaft rubs hard on structure — this rub (**hard**) precipitates the immediate and ultimate failure. If we had only bending and/or excessive torque, it is likely that the shaft would have been in two pcs. Not three.*

APPENDIX G

IN RE: AIR CRASH DISASTER AT MANNHEIM, GERMANY ON SEPTEMBER 11, 1982.

Plaintiffs represented by other counsel of record.

Counsel:	*Case:*
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	ALICE E. DEVAULT, Individually and as Personal Representative of the Estate of Lee DeVault, Deceased (USDC No. 83-0969)

JOAN DORIS PORTER,
Individually, and as
Personal Representative
of the Estate of Russell
John Porter, Deceased
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BRENDA HELEN RAYMOND,
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and
EDITH AMY RIDGEWELL
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MILADA RUCHTI, as Widow
in her own behalf and as
Mother and Natural
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and Andreas Ruchti
surviving minor
children of Erich
August Wilhelm Ruchti,
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CHERYL A. ESCHLER,
as Mother and
Natural Guardian of
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Jared M. Eschler,
Joseph M. Eschler,
Jeffrey M. Eschler, and
Melissa D. Eschler,
Minor Children of
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Conrad Fonfe, Deceased
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KAREN HAZELL,
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Guardian of Charlotte
Victoria Cook, a minor,
ROBERT JOHN COOK and
GLADYS COOK
(USDC No. 83-1858)

PETER GEORGE
KIBBLEWHITE
and EILEEN YVETTE
KIBBLEWHITE,
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Estate of Paul Wayne
Charles Kibblewhite,
Deceased
(USDC No. 1852)

SUSAN LAURA SHIERS,
Individually, as Personal
Representative of the
Estate of Stuart James
Shiers, Deceased, and as
Next Friend and
Guardian of
Deborah A. Shiers,
a minor, and
VIOLET SHIERS
(USDC No. 83-1854)

BARBARA D. SCOTT, as
Personal Representative
of the Estate of Bruce
Scott, Deceased and
Guardian and
Conservator of the
Estate of April Scott,
a minor
(USDC No. 83-0970)[1]

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[1]Motion to Intervene in *Scott* filed by
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Cases:

BIRGIT BROCK,
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minor, by and through
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(USDC No. MDL 555)

MICHEL PIERRET and
ANITRES PIERRET,
Individually and on
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of Marc Pierret,
Deceased
(USDC No. 83-1994)

KARIN TRUMPFHELLER,
Individually and TOBIAS
TRUMPFHELLER, a minor,
by and through his
natural mother and
guardian,
KARIN TRUMPFHELLER
(USDC No. MDL 555)